The Journal of the
American Medical Association

VOL. XXXIII CHICAGO, ILLINOIS, SEPTEMBER 16, 1899. No. 12

Address.

A PROFITABLE MEDICAL EDUCATION.*

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In the following remarks, which it is now my pleasant duty to make, I shall bear in mind that I am addressing a select body of medical gentlemen on a most familiar topic; one that is uppermost in our minds on the occasions of these annual meetings; of the utmost importance to us as teachers as well as our students, and a subject concerning which there are honest differences of opinion. It is not my intention at this time to elaborate a complete system of medical education, but rather to bring forward again some of the main elements in what constitutes for the now-a-day average graduate in medicine a profitable training. In doing this I am aware that you may recognize some old straw being rethreshed, but I am put to it by the conviction that they are worthy of frequent repetition.

The most conspicuous fact relative to medical education is its continual change. From the crude ideas on anatomy, which the early Egyptians must have had, through their practice of the healing art and the embalming of dead bodies, and from the rules in hygiene with which the book of Leviticus abounds, through the mysticism, fanaticism and reforms of the several intervening periods up to the present, medicine has been an ever-changing art, a constantly-growing science. Within our own memory, with the progressive development of the older correlated branches of medicine proper, such as physiology, physiologic chemistry, hygiene and pathology, and by the birth of histology, bacteriology, electrotherapy and other newer sciences, the curricula of medicine have of necessity been greatly modified and expanded. Prescribed schedules of study have from time to time been lengthened to admit of additional courses, and at the same time a system of compression has been practiced in all of them in order that new matter might be introduced. In calling attention to these incidents no thought of destructive criticism is indulged in. They are the inevitable results and evidences of the growth of knowledge. They are, in fact, evolutionary changes. As we have observed them in the recent past so may they be looked for in the future.

While these modifications are entirely consistent with real progress, it is nevertheless profitable for us as teachers to be frequently reminded of the true purpose of medical education and of what it should consist. As the mariner, in pursuing his journey over the trackless deep, turns ever and anon to the compass and by it shapes his course, so we, in guiding our pupils through the maze of useful and curious knowledge, need now and then to get our bearings, lest we unwittingly stray from the proper path.

In considering the various uses of knowledge it is pertinent to ask whether the accumulation of medical and correlated science, and whether mental discipline in medical lore do in themselves fulfil the most desirable intent of our instruction. Again, is the chief end of our college work to develop Harveys and Huxleys and Grays and men like Agassiz, scientists who unravel bits of Nature, but doctors who do not practice? Even were we capable of doing this, something beyond the most of us, suppose we were to pick from off the benches those who have promise of scientific discoveries, how rarely would future years demonstrate the wisdom of our choice. I feel confident that you will agree with me that the product of our medical schools should be first and always men of action; men whose professional ability depends upon perfection, not so much in the science as in the art of healing. Such are they whom the world most needs and demands and to whom it gives a substantial reward. Ideals are as noble and as attractive in our profession presumably as in any other, but the bread-and-butter motive will always be with most of us the more determinate force.

Equally as important as a proper appreciation of the ends of study is the administration of the needed training. There is involved in this an understanding of both the character of our raw material and the management of the machinery at our command. Some persons have regarded it of sufficient importance to declare the advisability of laying the foundation for technical study in early childhood if possible, or in youth. This would seem to be an ideal and most desirable plan, but unfortunately for the bulk of those who come under our care it is only a dream of a lost opportunity. They come to us from the cities and from the farms, with limited literary attainments as well as after prolonged preparation. We hold entrance examinations, and during the successive terms also weed out the incompetent and unfit. There is left, we are wont to say, a lot of picked young men; but if we think them to have more than fair average capacities we are most truly mistaken. This fact should be borne in mind as we gradually raise the standard of admissions to our schools. I would in no wise curtail the requirements which the Association has already fixed. I do not forget the part which I feebly played in putting the standard to its present height. We shall doubtless learn that further advancement in this direction will be with difficulty made and at some cost in some of the schools. It is nevertheless most desirable, must come, and will most easily follow a rigid adherence to the rules we are now pledged to obey.

On the improved qualifications of our applicants will depend the solution of some of the problems now pressing their attention on us. Our curricula have been taking on new, yet essential branches, and in some respects need revising. Our laboratory work, so promising in its results, has been wonderfully increased in both breadth

*President's address, delivered before the Association of American Medical Colleges, Columbus, June 5, 1899.

and depth, and, unless due caution is observed, is apt to crowd out other equally important training. To meet the exigencies we have lengthened the term of study and still the work is crowded. In our enthusiasm for diversified knowledge and special training for our students we should not forget the object in view. However patient and persevering our young Lydgate may be, his fellows will not be content with dry crumbs and long years of waiting, and we have no right to expect it of them. They are not destined to be martyrs to science, nor to be secluded by a cloistered wall. They are to be working doctors; men of affairs and of the world, partaking of its joys as well as soothing its sorrows.

There is no doubt as to the value of the fundamental branches of medicine. A fair elementary knowledge of physics, botany, general chemistry, biology and embryology is essential to a proper understanding of the superstructural branches and should, without exception, be insisted on. Preliminary preparation in physics and botany is already very generally required for admission, and there is no sufficient reason why all the other subjects named above should not also be relegated to the preparatory schools. Gradually this list might be extended to include elementary physiology and general bacteriology, including a limited amount of laboratory instruction. In this direction there may be afforded a degree of relief and provision made for desirable changes affecting the more technical branches.

As to the instruction itself, what I have to say appertains perhaps less to the Association than to the faculties and teachers whom we severally represent. Its important bearing upon the subject in hand is my excuse for bringing it in here. It has reference first to the modes of teaching, and secondly to the subject matter in which we deal. The modes of instruction which we have adopted are, in the order of their probable origin: the clinical, the lecture or quiz, and the laboratory methods. They are distinctive in style and function. No one of them can be made to serve as a satisfactory substitute for either of the others. Each one has its place. Their comparative value for our present purposes is however the important matter. The question is: To what extent shall each be employed? For an answer to this inquiry we have only to consider the end in view. On this point Dr. Holmes has so pertinently expressed an opinion with which I fully agree that I quote his words: "I myself have nothing to do with the clinical teaching, yet I do not hesitate to say it is more essential than all the rest put together, so far as the ordinary practice of medicine is concerned; and this is by far the most important thing to be learned, because it deals with so many more lives than any other branch of the profession." For the great majority of our graduates the clinical features of their college work will have been found to have served them best. When time shall have erased the theories and details of the lecture-room, and effaced from the mind the laborious distinctions of the laboratory desk, the pictures of diseased yet living forms will still remain as a perennial spring of knowledge and advice. As far as the subjects are adapted and our facilities will allow, the clinical mode should predominate, and neither of the others should be permitted to encroach upon it. By reason of its objective and tangible style, the laboratory method will be found preferable to the scholastic whenever a choice is possible.

Concerning the matter of instruction, distinctions should be made between the essentials and non-essentials of knowledge. At best facts are only scintillations of truth. We see one here and another there, with a blank between. As Holmes has also remarked: "Science is the topography of ignorance. From a few elevated points we triangulate spaces inclosing infinite unknown details." While it is true that related knowledge is more easily taught and remembered than isolated facts, it is folly to unnecessarily consume our time and cumber our minds with useless non-essentials.

There is one more reform which appeals to me as worthy of our attention. For many years we have had laid before us the desirability of adopting the metric system of weights and measures. I need not go into details regarding the bungle and inexactness of the system we use and the obvious advantages of the other. Most of us have a working knowledge of the newer method, but habit and the want of unanimous action delay its exclusive use. We advise the teaching of it, and many of the schools have followed our instruction. Its general adoption is, however, too long delayed. Progressive men in other lines have very generally discarded the older modes as obsolete, and we have the authority of their national association that the pharmacists are only awaiting our consent before doing the same. They have suggested a plan of action which commends itself as both feasible and promising in its results. It is that in our schools of medicine the metric system *only* shall be taught. As I am aware of no serious objections to this plan, I heartily recommend to this Association the grant of its influence and authority in promoting its success. It is in the line of progress, will have an incalculable effect upon the science we love and by which we live, and should receive our serious consideration and approval.

Original Articles.

GALL-STONES.

CONSIDERATION OF THEIR ETIOLOGY, DIAGNOSIS AND OPERATIVE TREATMENT.*

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Cholecystotomy was first performed by Boggs in 1868. It was not made a formal operation until ten years later, by Marion Sims. In less than a score of years, therefore, it may be said that the surgery of the gall-bladder and ducts has been developed until it would seem that little can be added to what is already known, or that greater success can be obtained in the future than the past has yielded. Nevertheless, there are many points in the etiology and diagnosis of gall-stones, their concomitants and sequelæ, that are mooted, and the elucidation of which may eventually make more successful the results to be obtained from operation. To some of these points I wish to direct your attention, and, as far as possible, to illustrate them with appropriate case reports and specimens.

Concerning the etiology of gall-stones comparatively little is known. Certain it is that the experiments made to produce them around foreign bodies introduced into a normal gall-bladder have almost always failed. Homans and Kehr have each reported a case in which a stone formed about a ligature.

The changes in the urine which lead to crystallization within the kidney or the secondary calculus formation

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

in the bladder, which can be recognized by urinalysis, present no analogies in the origin of gall-stones. This seems to depend on crystallization of an excess of cholesterin, possibly due to stagnation within the gall-bladder and the absorption of water, probably the result of a transient infection of the mucosa and desquamation of its epithelium.

Naunyn has shown that the cells lining the gall-bladder exude a substance which, by the addition of acetic acid is formed into cholesterin. It is now generally conceded that with few exceptions gall-stones only originate in the gall-bladder, and that the nucleus about which crystallization takes place is of hemic or bacterial origin.

Gall-stones present but few varieties, the vast majority being formed either of pure cholesterin or of bile pigments. Either of these may secondarily be encrusted with lime salts when retained for any length of time within a suppurating nidus. In size, in color, and in shape they vary much, even more in numbers; still, the gall-stones found in an individual case, as a rule, resemble each other as much as do peas in a pod. Not the least interesting cases are those in which nothing is found within the gall-bladder or its ducts save a few calculi not larger than millet-seeds, or a little biliary sand, black in color, as hard as emery, and so insignificant in quantity as often to be isolated only with great difficulty.

When we regard a gall-bladder containing anywhere from two or three to as many as a thousand gall-stones, we involuntarily ask ourselves: When did these gall-stones develop; what, in point of age, is their relation to each other, and is it possible that they were formed at about the same time and from a common cause?

I believe this to be the case, but gladly admit it to be beyond my ability to prove. The similarity in color, size, shape and identity in a few of the specimens, examined chemically, of stones removed from the same gall-bladder forms the foundation for this view. Furthermore, recurrence of symptoms after gall-stone operations is uncommon. Since my first operation, in 1879, I have had no instance in which a second operation was necessary, and only two in which there was a recurrence of symptoms. A choledochotomy in one of them was followed by the voiding of a stone two years later. Kehr has operated eight times in the same patient. Hermann of Carlsbad claims to have seen 15 patients who had been operated on; of these 7 had recurrence. When a stone is discharged soon after operation, through a fistula or by natural ways, it is reasonable to assume that it was overlooked at the first operation. On the other hand, there are exceptional cases in which it seems evident from the appearance of the calculi that they are chronologically far removed from each other, although contained within the same bladder. In looking over my specimens of gall-stones removed by operation, I find only three in which it seems self-evident that there is a marked difference in the respective ages of the gall-stones removed. In the prognosis as to the recurrence of gall-stones after operation, a solution of this question would manifestly be of first importance.

In the point of diagnosis it is ordinarily not difficult to come to the conclusion that gall-stones are present, although cholelithiasis, as has been shown time and again by autopsies, is one of the most frequently overlooked of all disorders. Certainly the diagnosis of gall-stones is not made in any community in every tenth or even every thirtieth individual. Yet in from 3 to 10 per cent. of adults—according to Paulsen and Naunyn—varying with different countries, gall-stones are found. Quite recently I had occasion to remove gall-stones from a deaf-mute, 45 years of age, who had previously had her ovaries removed for supposed ovarian disease, and later been treated, a short time before the diagnosis of gall-stones was made, for stricture of the right ureter and consequent renal distension. The attack of colic itself is apt to be mistaken for biliousness, dyspepsia, cardialgia, kidney colic, appendicitis, intermittent fever, intestinal obstruction, pleurodynia, and most frequently of all for gastric catarrh. The variety of affections for which gall-stone may be mistaken gives evidence of the lamentable fact that, with the exception of a passed stone, there is no reliable sign of the presence of a gall-stone or of disease within the biliary passages. Even the Roentgen ray has failed of its first promise. Notwithstanding this defect, it is my belief that where an operation is made for the relief of gall-stones a failure to find one is far less likely to meet the operator than in similar exploratory operations on the kidney. In the cases that have come under my care I have but once failed to find a gall-stone or disease of the gall-bladder. This was a case referred to me by Dr. J. A. Brown of Germantown, of a man of 30 years of age, who had passed eight or ten characteristically faceted stones. On the day fixed for the operation at the Good Samaritan Hospital, he was seized with a colic, which necessitated its postponement. The stone passed and was found in the stool. Three days after the attack was over a cholecystotomy done before the class revealed an absolutely empty gall-bladder and gall-ducts. The last stone had passed.

From an enormous experience, Riedel has come to the conclusion that the biliary colic is not due to the passage of a stone but is the result of an inflammation of the biliary ways. He substantiates this by the frequency with which the attack of colic is ineffectual, so far as the expulsion of a stone is concerned. When by the use of alkaline waters this inflammation is reduced, the transit of a stone is not usually associated with pain. It is the experience of every operator, furthermore, that the mere presence of a foreign body, like a probe or drainage-tube, in the biliary ways is not always productive of colicky pain. In a general way the diagnosis of cholelithiasis is easily made. That as to the location of the stones is far more difficult and often impossible, nevertheless there are certain features which permit one to come very near the truth.

Mr. Jordon Lloyd has very properly grouped gall-stone cases into those in which the gall-bladder walls are yielding and allow of its distension, and those in which the walls are contracted, thickened and indistensible. In either of these groups the stone may lie in the gall-bladder, in the cystic duct or in the common duct. When stones occupy a distended or distensible gall-bladder alone there may be no symptoms except the attack of colic, with a mild jaundice a day or two following it. When the stone occupies the cystic duct, jaundice is not usually present; there are attacks of colic and considerable distension of the gall-bladder. Frerichs had already shown that in these cases the stone within the cystic duct may act as a ball-valve, permitting the entrance of bile into the gall-bladder and preventing its egress. It is in these cases in which the gall-bladder is often very largely distended that we find what Hippocrates already called white bile, which is nothing more than the accumulated secretion of the glands of the

vesical mucosa. Jaundice is not a common evidence of stone in the cystic duct, although in one of my cases a large stone imbedded within it near its confluence with the hepatic duct had so occluded the latter as to produce a very deep jaundice. When there is a stone in the common duct, with a distensible gall-bladder, there is usually present more or less deep jaundice, pyrexia, a distended gall-bladder, and moderate enlargement of the liver from distension of the finer biliary ways.

Stones limited to a shrunken and indistensible gall-bladder are not easily located with precision. They may be suspected where there are frequently recurring paroxysms of pain and where there is tenderness in the region of the gall-bladder, without the presence of a tumor. A stone within the common duct, with dilatation of it and the cystic duct, and a shrunken state of the gall-bladder, probably presents evidences of its location with greater certainty than any hitherto considered. It is in this class of cases particularly that the hepatic intermittent fever of Charcot and of Osler manifests itself. In one of my cases, recently operated upon, these intermittent attacks had lasted for nearly ten years. The attacks invariably began with an intense paroxysm of pain, which was associated with a rigor, followed by temperatures of 103 and 104, and profuse perspiration. While the patient always presented during the entire period of his gall-stone history a sallow appearance, the jaundice became very deep after each attack. Nowhere in the biliary passages is the ball-valve action of a gall-stone so perfectly manifested in the clinical history as in those contained within the common duct. Paroxysmal pains and jaundice, varying in degree, are almost invariable evidences of gall-stones located within the common duct. When gall-stones are contained within the gall-bladder as well as within the common duct, no symptoms exist from which the presence of stones within the gall-bladder could be recognized. From a clinical as well as from the standpoint of operation, the stones within the gall-bladder then play a very subordinate rôle. This applies equally to the rather rare cases in which stones are found within the hepatic as well as the common duct. The condition is uncommon. It has been my privilege to see but two cases, one in an operation, the other in the autopsy of a case seen with Dr. Withrow. The patient, a male nearly 70 years of age, refused an operation, which was not particularly urged, since malignant disease was strongly suspected. Three large stones were found, one in the gall-bladder, one in the hepatic and one in the common duct.

Cholecystitis from other causes than stone can not be distinguished from that due to stone. In three cases I have met this distension of the gall-bladder from obstruction of the cystic duct without the presence of a stone. In each of these cases a tumor was manifest. In only one of the cases had the infection led to pus formation; in two of the cases there was found a thick, ropy, black bile and biliary sand or small calculi. It is interesting to note that in three of my cases of choledochus stone, with the fever curve indicating the presence of pus, pus was not found. The cause of the febrile elevations in these cases of cholecystitis and of choledochus stone, where there is no suppuration, is utterly unknown. It is ascribed to some ptomain poisoning, but it is interesting, in view of the fact that cholemia from obstruction, as in malignant disease, is, as a rule, associated with a reduction, rather than an elevation, of temperature.

Among the diagnostic features of lesions of the biliary ways there is one that merits special attention. I refer to icterus. Until Lawson Tait pointed out that it was rather an evidence of malignant disease than of lithiasis, persistent jaundice was held to be an almost unfailing sign of the presence of gall-stones. Latterly its import has been overrated in the diagnosis of cancer. Per se, icterus is a most unreliable symptom, both as to the nature and location of an obstruction. In two cases of men over 70 years of age—one of my own and one of Dr. Evans'—in whom persistent icterus, with pain, vomiting and progressive emaciation might have pointed to the existence of pancreatic carcinoma—the operation revealed large stones in the gall-bladder alone. In regard to the importance of this symptom in localization, on theoretical grounds its persistence could only mean obstruction by stone in either the common or hepatic duct. Yet in three cases of empyema of the gall-bladder from stone and in one without stone, which I have operated on, jaundice was both pronounced and persistent without the presence of a stone in the common duct. In all these cases the icterus was of an inflammatory nature, and depended on an extension of the swelling from the mucosa of the bladder to that of the common duct. Riedel has rightly called this condition "inflammatory concomitant or allied jaundice." These cases, and those in which stones are not found, furthermore establish a fact often disregarded. It is that the severest biliary colic does not necessarily depend on the transit of a stone, but on the expulsive efforts of the gall-bladder to force its secretion through a duct largely reduced in its lumen by infiltration of its walls.

The effort of Riedel to ascribe every biliary colic to an inflammatory process rather than to the passage of a stone is futile. I have seen time and again the probing of a healthy cystic duct produce pain very like that of a biliary colic.

Empyema of the gall-bladder is ordinarily recognized with ease, yet are there cases where it has been mistaken for periappendiceal abscess or for a floating kidney. In one case I removed from an incision made for appendicitis four gall-stones. The clinical history was not that of an acute appendicitis. The patient, a very fleshy woman, 40 years of age, had suffered repeatedly from gall-stone colic. For seven weeks before the operation was performed she had been confined to bed with the general evidence of intra-abdominal suppuration. At the time of the operation the abscess was limited anteriorly by the omentum, which had become adherent to the colon and cecum. It could be traced upward toward the region of the gall-bladder, although its upper limit was not accessible. Had it not been for the presence of the gall-stones a differential diagnosis could not have been made even at the time of the operation, since the density of adhesions precluded the search for the appendix.

In a case operated on by me for Dr. Little of Cambridge City, there was a clear history of appendicitis. The operation revealed the presence of four faceted stones that looked at the first glance like biliary calculi, but section showed that they were but calcareous incrustations of small fecal masses—enteroliths. The possibilty of mistaking a gall-bladder for a distended kidney exists, since in not a few cases an incision in the loin for the supposed renal disease revealed the presence of gall-stones. Such a case was reported to the Academy of Medicine of Cincinnati a few years ago by Dr. Jones. The error in diagnosis is the more readily made since Riedel has shown that the prolonged existence of gall-stones will often, by traction of a distended gall-bladder, more or less separate from the

under surface of the liver a tongue-shaped lobe, which, being in front of the gall-bladder, gives semblance to the form of renal tumor.

It does not seem probable that any perihepatic suppuration could be mistaken for empyema of the gall-bladder. Nevertheless, a case recently came under my observation in which a differential diagnosis could not be made until the abdomen was opened. The case was that of a lad of 15 years of age, who repeatedly had attacks of pain in the hepatic region. According to the clinical history, these pains were never associated with elevations of temperature. Three weeks before the patient was subjected to operation he had sustained a slight blow upon the abdomen. For a week he did not complain. He was then seized with violent pain in the region of the gall-bladder, which projected itself toward the back. When seen, twelve days after the inception of the disease, by myself and Professor Nickles, all the evidences of intra-abdominal suppuration were present. There was no enlargement of the liver, although an indistinct tumor could be found below the costal arch on the right side, which was exquisitely sensitive to touch. There was a slight sallowness of the skin. The diagnosis lay between empyema of the gall-bladder and subphrenic abscess.

The operation, performed February 28, revealed a normal gall-bladder and appendix; between the liver and the diaphragm adhesions were found. The wound in the peritoneum having been closed, search through the adhesions revealed a small subphrenic abscess, containing not more than two ounces of pus. It was evidently one of the rare cases which have recently been described, of subphrenic abscess, the result of a trauma, and independent of the gall-bladder and the appendix.

Given the diagnosis of gall-stones, the question of treatment interests, besides the patient, medical men and surgeons alike. What are the prospects from internal medication: what the dangers of operation? When is the time for surgical intervention; What form shall it take? The fact that gall-stones are so often found in autopsies without having ever made themselves manifest, so far as can be known, during life, does not argue so much for nonintervention as one would think. These are the cases in which the gall-stones did no harm, their presence was not suspected, and they could, therefore, not have been made the object of an operation. When gall-stones do make themselves manifest by symptoms more or less violent and pronounced, it is well known that they may be entirely expelled or be retained within the gall-bladder without doing further mischief. The period during which a patient may suffer is often measured by decades.

What internal medication can accomplish in cholelithiasis must be left for the consideration of the internists. I have had personal experience in numerous cases in which it, together with restriction of diet, and possibly a trip to Carlsbad or to French Lick, has seemingly put an end to the attacks of hepatic colic. I do not believe, therefore, that every case in which the diagnosis of cholelithiasis has been made is a fit subject for an operation. Furthermore, I am convinced that no complication of cholelithiasis short of secondary malignant disease is so grave but that it may be recovered from. I have twice seen gall-bladder empyema relieved spontaneously when the local and the systemic conditions seemed to make an operation imperative. I have once seen a ruptured gall-bladder terminate in recovery after an abscess of the liver which it produced was opened. Courvoisier tells us that out of 135 cases of intestinal obstruction by biliary calculus, 70 ended in spontaneous recovery. I beg to present a specimen so recovered, and another specimen removed by operation. In view of these facts, unless indications that are vital exist, the suffering of the patient and the frequency of the attack must determine whether or not an operation is to be done. In every case in which the gall-bladder becomes distended, or in which the signs of empyema are made out, or if any obstruction of the common duct be present, if only for a short time, an operation should not be delayed. Furthermore, where the diagnosis of gall-stones can not be made with accuracy, and where, from the symptoms, one might suspect the existence of adhesions, such as were mentioned above, and to which Lauenstein particularly called attention, an indication for an exploratory operation may be said to exist.

As in so many other fields of surgery, the early intervention is the least dangerous. When patients afflicted with gall-stones are informed of the dangers that may arise, of the relative mortality of simple cholecystotomy during the interval, and of choledochotomy in subjects reduced by high fever and by jaundice, it is certain that consent to an operation will not often be withheld.

What shall be the usual operation in uncomplicated cases of gall-stones within the gall-bladder? Notwithstanding the objections that have been made to it, I believe cholecystotomy, with the establishment of a biliary fistula at one sitting, best suited to the average case. The mortality from it is very small. Out of forty-seven cases I have had three deaths. One, my first case, was in a man of 76 years of age, who had been intensely jaundiced for six months. The hemorrhage was very severe. I believe that in this case life might have been saved by resorting to Riedel's favorite operation of cholecystotomy in two sittings. The other fatal one was one of empyema of the gall-bladder, with high sepsis and jaundice. No stones were found in the gall-bladder or ducts. The patient died twenty-one days after the operation, with uremic symptoms. Acute desquamative nephritis was found in the kidneys by Dr. Topmueller, who made the autopsy. It was probably the result of prolonged ether narcosis. No peritonitis was found, nor was there anything in the condition of the wound or gall-ducts to account for the fatal issue. The third death occurred in a case of gangrenous cholecystitis, referred to me by Dr. Curry of Lebanon, in which the existing profound sepsis was not relieved by operation.

In another case recently operated upon death followed forty hours *post operationem*, from intestinal obstruction. My patient was a male, 40 years of age, who had suffered during twenty years with severe biliary colic. In recent years it required from two to three grains of morphia as a first injection to relieve the pain. In the intervals there was a continuous dull ache in the region of the gall-bladder. Light attacks of jaundice had been noticed. The patient had passed what was supposed to be a gall-stone three years before. An examination of the powder showed it to be of some lime salt and devoid of cholesterin. Operation under chloroform narcosis, was performed Dec. 30, 1897, at Christ's Hospital. The abdomen was very thick and muscular. The incision parallel to the costal arch was made six inches long. Unfortunately the thorax was a very long one, with the free hepatic margin two inches above the costal arch. The intestine was kept out of the way only with great difficulty, and the gall-bladder, covered by the lingual appendix of Riedel, could be felt, but by no operative technic brought

into view. Within it a single stone could be felt. Cholecystotomy, cholecystectomy and cholecystenterostomy were to me technically unfeasible. In the hope of establishing a ventral biliary fistula along a track limited by adhesions, the fundus of the gall-bladder was caught in the bite of a long forceps and the wound packed about the latter with gauze. The greater portion of the abdominal incision was finally closed. Eight hours *post operationem* vomiting of bile occurred, and during the night the vomiting assumed the regurgitant type. Twenty-four hours after the operation the gauze packing was removed without affecting the symptoms of obstruction. *Exitus lethalis* followed in forty hours. Although in this case I had expected to encounter no operative difficulties, it proved to be the most embarrassing of all my gall-stone cases. It is more than probable that the lamentable result was due to the tight gauze packing, which was made necessary by the tendency of the intestine to prolapse.

The chief objection to the method of cholecystotomy under consideration is the long continuance of the biliary fistula. In most cases the fistula closes in from two weeks to two months. It is very rare for much of the bile to escape from the fistula after the second month. I have the records of only two cases; in one the fistula continued to run for six months and then closed spontaneously; in the other a second operation had to be done, with division of a stricture of the cystic duct, more than a year after the first operation. It is wrong to call the fistulas remaining after cholecystotomy biliary fistulæ, for the most part it is not bile that escapes from the wound, but a little glairy mucus slightly tinged with bile. There are two things, in my judgment, that have a tendency to keep the fistula open when the obstruction is not in the common duct. One is the suturing of the gall-bladder too far into the abdominal wound or even to the skin, as is not infrequently done. In my latter operations I attach the gall-bladder only to the parietal peritoneum and the fascia over it. The other is the use of the silk ligatures, which I have supplanted altogether by the use of animal sutures in anchoring the gall-bladder.

Ideal cystotomy, an operation first performed by Meredith and highly indorsed by Bernays, Courvoisier and many of the French surgeons, would be *the* operation if it were devoid of danger. I have performed it twice, once with success, and in one case, which appeared to me an ideal one for the procedure, death resulted from peritonitis. In this case I thought I had sufficiently anchored the sutured gall-bladder to the abdominal parietes to prevent infection of the peritoneum, even if the sutured gall-bladder should not hold. I think I have performed my last cystendesis. Aside from the apparently greater danger of the operation, other objections can be justly brought against it. The drainage of the gall-bladder and the consequent relief of its swollen mucosa can not, of course, be accomplished through it. If a single stone has been overlooked—and that is possible, even probable—the object of the operation has failed of accomplishment. In not a few of my cases, although I had believed I had removed all the stones, small calculi would be repeatedly found in the dressings.

A method of cholecystotomy that must not be entirely overlooked is that originally performed by Boggs, and still advocated by Riedel and many other operators. It is the cholecystotomy in two sittings. Its advantages are that it can be quickly performed, if need be under cocain, and that the danger of infecting the peritoneum is nil. I have never performed it, but believe that in one of my cystectomies, fatal from hemorrhage, this method of operation might have been followed by a different result. In deeply jaundiced individuals, when cholemia has existed for a long time, and hemorrhages from the mucosæ show what is to be expected in an extensive operation, and when there is a distended gall-bladder, I think that cholecystotomy in two sittings has its proper place. For the ordinary cases of gall-stones it should be discarded. It prevents absolutely the examination of the deeper biliary ways and makes one helpless in the event of an adherent or fixed stone within them. In probably one-third of all cases of biliary lithiasis one of more stones are impacted within the cystic duct. This is at once made manifest by the hydrops of the gall-bladder. It is difficult enough to remove these with one finger in the gall-bladder and the other without. After cholecystotomy in two sittings a second laparotomy must at times be made to remove these deep-seated stones. No operation or wound of the gall-bladder should be closed until the operator has reasonably satisfied himself that there is no obstruction beyond its neck. Exploration of the cystic duct is ordinarily associated with little or no difficulty, nor is the digital examination from without of the upper two-thirds of the common duct difficult in ordinary cases. With the finger in the foramen of Winslow the free border of the lesser omentum can be palpated without any difficulty, as low as the duodenal terminus.

The difficulty in the way of this palpation, however, may be almost insurmountable. Hartman has called attention to an enlarged lymphatic gland, which I have met in one or two cases, which might very readily impress one as being a soft stone. To the management of the stone in the common duct I shall refer later. No operation of cholecystotomy is complete without an effort likewise to establish the patency of the bile passages by catheterization. In a very large majority of cases this fails. It has been shown that, even in normal subjects, catheterization is not always feasible. In some cases the soft bougie passes without any difficulty as far as the Vaterian ampulla, showing that the ducts are free. In most cases, however, owing to an inflammatory thickening of the mucosæ or to the catching of the bougie in some fold, or from some tortuosity of the neck of the gall-bladder and its ducts, the progress of the bougie is suddenly checked. The meeting of an obstacle does not mean either a stricture or an obstruction. It is a common experience after cholecystotomy to find that bile does not flow through the cystic duct during the first twelve or twenty-four hours. At the time of the operation catheterization necessarily failed. What was an apparent stricture was relieved with the subsidence of the swelling of the neck and duct of the gall-bladder. With this flow of bile through the fistula the surgeon has cause to feel relieved of his anxieties in the individual case.

Since Langenbuch, in 1882, first extirpated the gall-bladder, cholecystectomy has found many followers, particularly among French surgeons, among whom Péan, Terrier and Thiriar may be mentioned. Cholecystectomy has been held up as the only radical operation for biliary lithiasis. Were it impossible for stones to be formed elsewhere than in the gall-bladder this claim could not be questioned, but it has been established beyond doubt that they can form in the common, the hepatic, and even the smaller ducts. Recurrence after cholecystectomy has been observed, and a number of cases have been recorded in which the overlooking of

stone in the common duct during the extirpation of the gall-bladder has caused the death of a patient. In yet other cases the lethal end was averted by the spontaneous establishment of biliary fistula after the operation. I have twice performed cholecystectomy, not through choice, but through necessity. In the one case a small shrunken bladder suffered in the efforts to liberate it, as I believe, beyond the possibility of repair. In the second case a large and soft bladder was torn into during the manipulation in such a way that a fistula could not be established. Both patients recovered, but the operation proved very much more difficult than cholecystotomy. I believe that cholecystectomy should be reserved for cases in which the position and shrunken state of the gall-bladder *and the friability* of its walls make cholecystotomy impracticable.

What shall be done with stones in the cystic duct? It has already been stated that in nearly one-third of all cases stones will be found more or less firmly wedged here. As a rule they can be easily pressed back into the gall-bladder by the finger from without, or forced from their position by irrigation. In the case of soft stones they may be crushed between the fingers or by forceps, after the manner suggested by Tate. In the event of these measures failing, the impacted stone should be directly cut down upon and removed. Primary cysticolithotomy is the proper procedure. When the stone has been removed, the closure of the wound with a continuous catgut suture completes the operation. I have thrice opened the cystic duct in this way, without any untoward complication. To prevent possible infection of the peritoneum I have always resorted to drainage and gauze packing in these cases. I believe a cholecystotomy an essential to success when the cystic duct is thus opened. When a fistula has been established no tension whatever can be placed on the sutured wound in the cystic duct, and union goes on unretarded. Kehr has quite recently reported five successful cases to the German Surgical Association. (1894.)

The acme of difficulties in gall-stone surgery is reached when a stone becomes firmly lodged within the common duct, from which only in exceptional cases it can be dislodged into the duodenum, or brought backward into the cystic duct or gall-bladder. When any great dilatation of the biliary ways exists behind the stone, the removal of the stone, from within the cystic duct may be practicable. Unfortunately, in most cases the stone is firmly held within the duct, giving at times the impression of a neoplasm. In two cases at least an inoperable neoplasm was supposed to have been found during the operation, and an autopsy later revealed an impacted stone. The question at once arises whether a stone within the common duct should be left to take care of itself and an anastomosis established between the gall-bladder and the duodenum and colon.

I believe cystenterostomy is so advocated in every case by Murphy, the offending body being left to take care of itself. In my judgment this does not appear good surgery. Wherever feasible the foreign body should be removed by choledochotomy. As a factor in the causation of cancer, its importance is of the first order. Cystenterostomy should be reserved for impermeable stricture of the common duct, as shown by the continuance of a biliary fistula, and for malignant disease. If operations on the gall-bladder were more often performed as soon as the diagnosis of cholelithiasis had been made, it is certain that operations on the common duct for removal of impacted stones would be relatively less frequent than now. As it is, about 6 per cent. of the operations for cholelithiasis must be made on the common duct.

My personal experience had been limited to 7 cases out of a total of 62 operations on the biliary ways. Two succumbed to hemorrhage from the post-operative oozing so common when jaundice is present. In a third the stones were a part of carcinoma of the common duct. In removing them the vena porta was lacerated. Although the tear was successfully sutured the patient succumbed twelve hours after operation. The mortality of choledochotomy in 1890 was 40 per cent. Kehr has recently reported 32 cases with only 4 deaths. In all my cases, the choledochotomy was followed by immediate suture and drainage. Cystotomy was likewise performed in every case, except one where the shrunken condition of the gall-bladder made it unfeasible.

In conclusion, it might not be amiss to present a short résumé of my operations on the bile passages from my first operation in 1879. There have been altogether 62 operations on 54 patients, 47 being cystotomies for gall-stones, hydrops, empyema or gangrenous cholecystitis; of these 4 died. In 3 cases cysticotomy was added without a death. In 6 cases cystostomy was followed by choledochotomy and in one the latter alone was performed. All these cases have continued well except one; she passed a gall-stone two years after she was operated on, and has since continued well. Of the fatal cases 2 died from hemorrhage; the third was associated with carcinoma of the common duct. Cystendesis was performed twice, with one fatal issue. Rupture of the gall-bladder, I have observed twice. In the one case a retro-omental abscess was opened, with recovery. In the second case general peritonitis existed at the time of the operation, which failed to avert death. In one case a laparotomy was done for intestinal obstruction. The stone was found in the ileum about three feet from the cecum. Although operated on within sixty hours of the outset of symptoms, the intestinal paralysis was not recovered from. In one case of a common-duct obstruction from carcinoma of the pancreas, the jaundice was relieved by a cholecystenterostomy by Murphy's button. The patient lived nine months, and the button was buried with him.

While my experience in the surgery of the biliary ways is far from large, I feel warranted in submitting the following propositions for your consideration:

1. The gall-stones found in a gall-bladder are generally formed together, that is about one and the same time. Their removal will not be followed by recurrence unless a reinfection of the biliary ways occurs.

2. Cholecystotomy with drainage should be regarded as the normal operation.

3. Save in exceptional cases, the operation should be done at one time.

4. Ideal cholecystotomy or cholecystendesis is not to be recommended.

5. Cholecystectomy is rarely indicated in acute processes. It is more dangerous than cholecystotomy. Since most stones are formed in the gall-bladder, cholecystectomy is the more radical operation. It should be reserved for chronic cases in which a restitution of the gall-bladder to the normal cannot be expected.

6. Cysticotomy is a safe supplement to incision of the gall-bladder for stones of the cystic duct.

7. Choledochotomy with suture and drainage should be considered the routine procedure in common-duct stones. Incision of the duct through the duodenum or from an incision in the loin (Tuffier) will rarely be needed.

8. Cholecystenterostomy has a limited but distinct field of application, i. e., obstruction jaundice from malignant disease or impermeable cicatrical common-duct stenosis.

GALL-STONES.

OBSERVATIONS ON THEIR TREATMENT.*

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During the past decade it has become generally recognized that the treatment, if not the diagnosis, of certain diseased conditions demands from the moment of their onset the joint attention of both physician and surgeon. Among such diseases may be mentioned appendicitis, pyelitis, and, in its various forms, cholelithiasis. In the first mentioned of these diseases surgical observation is considered of so much importance that the case is generally transferred to the surgeon, or he at least is summoned by the family physician to see the patient in consultation, as soon as a probable diagnosis of appendicitis has been made.

In cases of cholelithiasis the drift of opinion is in the same direction, though for manifest reasons the importance of early surgical observation is less urgent. In the diseases just mentioned, as in all others, it is but natural and right that the family physician should first be summoned, but he owes it to his patient as well as to his own reputation, that a surgeon should be called *early* in the course of the disease, for it is only thus that a just estimate of the progress of the case can be formed whether it be toward permanent recovery, toward operative interference or—what is most common in such cases— toward a temporary stage of recovery. It is not alone the immediate outcome of the attack which is to be considered, but an important observation can thus be made and a definite opinion formed on the nature and severity of the disease should similar attacks occur in the future.

The decision as to the propriety of operation or as to the most favorable moment for such interference is often difficult and requires the nicest judgment, which must generally be based upon a large experience. The personal equation, and perhaps the training of the practitioner, will very often influence him in the decision of this question. Many of us who see such cases in consultation with physicians can frequently tell before visiting the patient whether it be wise to at once order preparations to be made for operation. When summoned by certain physicians I often feel so certain of the probability that immediate operation will be needed that all necessary arrangements are made before leaving my office.

The remarks just made apply of course only to large medical centers. The country practitioner judges his case from the standpoint of both physician and surgeon and we surgeons from the cities are often surprised by the keenness of observation, by the excellence of the judgment, and by the broad grasp of the essential characteristics of the case which are so often shown by our colleagues in the country.

Turning now our attention more particularly to the subject of this paper, cholelithiasis, we are confronted with a number of questions of the greatest importance, some of which have yet to be solved. Among these may be mentioned: What period of time is necessary for the formation of a gall-stone? Much difference of opinion exists on the subject, and the limits of the answer seem to be from a few days to many months. Another question is the influence of medical treatment on gall-stones. Prophylaxis is of the greatest importance, but the general consensus of opinion seems to be that gall-stones when once formed can not be materially influenced by internal medication. The character of the bile and the state of the lining membrane of the biliary passages may be favorably modified by medical and hygienic treatment, but a stone once formed can not be changed by any such treatment. If not too large, conditions for its passage into the intestine may be made more favorable, or the biliary passages may be brought into a condition where they do not resent the presence of a calculus, but more than this can not be expected from treatment by diet, drugs, or exercise.

It is now believed by many that so-called biliary colic is not produced so much by the passage through or impaction of a calculus in the bile passages as it is by inflammation of the gall-bladder and ducts. As long as the bile and the biliary passages remain normal a gall-stone will as a rule produce but few symptoms. It was formerly believed that gall-stones produced colic only when they began to move along toward the duodenum, thus causing an irritation of the ducts, and that reflexly vomiting and often fever would accompany the attack, but that jaundice and distension of the gall-bladder supervened only when the stone became impacted. We now know that this view is not entirely correct. It is true that a calculus is generally the cause of the inflammation in the bile passages—probably about 90 per cent. of the cases—but it is the inflammatory process and its complications rather than the stone which produce the severe symptoms. Distension of the gall-bladder will often take place when the cystic and common ducts are entirely free from stones, and not only will the usual symptoms which are generally attributed to the passage of a stone, such as colicky pain and vomiting, be thus produced, but also those of graver character, such as chills, fever, and jaundice, and death even may result without the impaction of a stone. It is sometimes forgotten that jaundice may thus be produced, and I find it to be a not uncommon error to suppose that the cause of jaundice occurring in an attack of cholelithiasis must be the downward passage of a calculus and its impaction in the common duct. In this connection let me narrate the following case:

CASE 1.—Mrs. A., aged 29 years, had been a vigorous girl, but since the age of 15 years had been subject to attacks of colicky pain in the abdomen several times a year. These attacks lasted from twelve to thirty-six hours, and were not often severe enough to confine the patient to bed. She had an attack of typhoid fever in the spring of 1898. On Feb. 19, 1899, the patient was seized with sharp pain over the region of the gall-bladder, and until February 26 she suffered from several severe attacks of pain, occurring daily, generally accompanied by vomiting. On account of the severity of the pain she had to be kept almost constantly under the influence of morphin. On February 25 slight jaundice appeared and her temperature rose to 101. Her physician, Dr. Bradshaw, wisely decided that operation was necessary. She was admitted to the Presbyterian Hospital on Feb. 26, 1899. Her temperature was 103, pulse 114 and she looked sick, the abdomen was moderately distended and there was tenderness over the region of the gall-bladder. She was distinctly jaundiced.

Operation was performed Feb. 26, 1899, under chloroform anesthesia. A 4-inch vertical incision was made through the right rectus muscle. The transverse colon was found adherent to the liver. On separating the adhesions a small, much thickened and adherent gall-bladder was found, about the size of a small walnut, there were also numerous adhesions about the cystic duct in which were felt two small calculi. The gall-bladder was opened, and through it the stones were extracted; they were three in number, with very sharp angles, and each

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

one not much larger than a millet-seed. The opening into the gall-bladder was sutured to the parietal peritoneum. The discharge of bile was very profuse during the next two or three weeks and caused a severe irritation of the skin, which produced more or less vomiting, which was probably nervous in its origin, but which for a few days in the second week was quite serious. The bile ceased to flow on March 24—the twentieth day. Up to the present time the patient has remained in perfect health.

Another stumbling-block which is often found in the path toward a correct diagnosis is the idea that if a stone be impacted in the common duct, the result will be a distended gall-bladder. The physician will sometimes argue that a stone can not be lodged in the common duct, because the gall-bladder is not distended, and he, therefore, decides against operative interference because the gall-bladder is not palpable. With a recent impaction, such distension is not uncommon, but with impaction which has persisted for any length of time a shriveled, thickened gall-bladder is the rule rather than the exception. In the case, the narration of which follows, the gall-bladder, which was opened on the twentieth day after impaction, was found markedly distended.

CASE 2.—R. F., married, aged 33 years, had always been healthy, having had three children. There was no history of previous abdominal pain. About Sept. 20, 1898, she felt rather miserable and on October 6 she experienced some vague abdominal pain, located at first near the umbilicus and later in the right hypogastric region. There was no nausea nor vomiting. The bowels moved after a dose of salts; the pain continued to increase until the date of her admission to the hospital, October 8.

On admission her temperature was 103 and pulse 90. She was a fairly well-nourished woman. There was no jaundice. The edge of the liver was felt an inch and a half below the costal margin; the abdomen was somewhat tympanitic; there was considerable tenderness in the right hypochondriac region, and there was felt, extending from the costal margin as far down as the umbilicus, a mass which seemed as large as a large cocoanut. It was very tender, and moved slightly with respiration. October 9 and 10 there was but little change; temperature 100.5 to 101.5. The mass was slightly tender but there was no diminution in its size or tension.

Operation was performed October 11, under chloroform anesthesia. A four-inch vertical incision was made through the right rectus muscle; the liver edge extended two inches below the costal margin; the gall-bladder was much distended and very tense. The patient was turned on the right side, gauze pads being packed around the gall-bladder; a trocar was plunged into it and gave exit to about six ounces of fluid, which at first was thin and clear bile, and then it became thicker and finally consisted of pus and mucus. The finger inserted into the gall-bladder felt a stone, oval, non-faceted, about 1¼ inches in length. It was extracted. The edge of the cut gall-bladder, whose wall was much thickened, was sutured with catgut to the parietal peritoneum and the remainder of the wound closed by suture. The patient made a good recovery. There was considerable discharge of bile, which, however, steadily diminished until November 2—22 days—when it ceased. The maximum temperature was 100.5 on the second and third days. The wound was entirely healed on November 8, on which day she was discharged from the hospital. She reported on May 20 that she had enjoyed perfect health since the operation.

In the next case which I will narrate the impaction had existed for four months and the gall-bladder was found shrunken and much thickened.

CASE 3.—R. H., aged 50 years, married, had enjoyed fair health, though she had occasionally suffered from attacks of so-called indigestion. In February, 1897, she suffered for ten days from a short attack of what was called biliary colic; she remained well for two weeks and then came another severe attack. Since then until May 24, 1897, when she was admitted to the hospital, she had suffered from similar attacks once or twice each week. The attacks generally lasted about two days, and began with severe pain over the region of the gall-bladder, with vomiting. This was followed by chills and sweating. From May 10 to 12 she was slightly jaundiced. During most of this time the urine had been of a dark mahogany color.

On admission, May 24, she was found to be a well-nourished woman; the abdomen, which was very fat, was somewhat tympanitic, and just below the free border of the right ribs there was slight tenderness, but no resistance and no tumor could be felt.

Operation was performed May 26, under chloroform anesthesia. A four-inch oblique incision was made an inch below the right costal margin, and the omentum was found adherent to the under surface of the liver, which was small in size. Under its edge was felt the shrunken and much thickened gall-bladder, adherent to the neighboring structures. After considerable search, which was difficult on account of the adipose tissue and numerous adherences, a calculus was felt at the junction of the common and cystic ducts and another in the common duct close to its entrance into the duodenum. As it was impossible to move either stone, the common duct was therefore hooked up with the left index finger and its wall incised and a three-faceted stone, the size of a hickory nut extracted. The other stone, somewhat smaller in size, was pushed through the same opening. The opening in the duct was closed by continuous catgut suture. A gauze drain was inserted and the remainder of the abdomen closed. The patient made a good recovery, there being a slight leakage of bile until June 27. She was discharged from the hospital July 2, and since that time has enjoyed good health.

In this connection it may be of interest to state that there are reported in this paper nine cases where choledochotomy was done for stones impacted in the common duct. In six of these a thickened, contracted gall-bladder was found, in one a thickened but moderate-sized gall-bladder, and in two a thickened and distended gall-bladder containing pus.

CASE 4.—E. J., aged 52 years, married, for eight or ten years had been subject to bilious attacks consisting of pain in the upper right side of the abdomen and accompanied by vomiting; the attack lasted usually from one to three days; she had been jaundiced but once. The present illness began on May 8, 1898, when she was seized with severe paroxysmal pain below the right costal margin. There was no fever nor vomiting and no jaundice. On May 15 she had another attack of severe pain and vomited persistently for twenty-four hours. There was marked local tenderness in the right hypogastric region. On May 17 slight jaundice appeared.

She was admitted to the hospital on May 18. The abdomen was slightly distended; she was tender over the right hypogastric and lumbar regions; there was marked jaundice; temperature was 102; she was very drowsy.

Operation was performed May 19 under chloroform. A mass could be felt in the epigastric region just to the right of the vertebral column. A four-inch vertical incision was made through the right rectus muscle. The edge of the liver was hard, irregular and much engorged, and was slightly adherent to neighboring structures. The gall-bladder was not visible. There was felt, just to the right of the bodies of the vertebræ, a hard mass the size of a duck's egg, to which were firmly adherent omentum and intestines. The mass was at first supposed to be a carcinoma, but after separating adhesions it was found to be an enormous stone, occupying the entire length of the common duct, which had become enormously distended to contain such a large mass. It was with considerable difficulty that the duct could be exposed so that a three-inch incision could be made through its wall, which was very much thickened. The stone, however, was too large to emerge from such an opening. It was, therefore, broken into several pieces with the points of a strong pair of scissors and was extracted piecemeal. It was then found that the mass consisted of an amalgamation of a number of stones, the two largest being about the size of a walnut. These were so firmly agglutinated that considerable force was required to separate them. The mass was four inches in length and the maximum circumference was six inches. A large amount of bile escaped after the extraction of the stone. The cystic duct was shortened and was apparently empty, but the finger passed on toward the gall-bladder. At its neck was found a constriction, and beyond this in the bladder itself were found thirty or forty smaller stones, the largest being the size of a hickory nut. The gall-bladder was contracted around these stones and was much thickened. It was not opened. The opening in the common duct was partially sutured with catgut. To facilitate drainage a counter-opening was made in the right lumbar region, through which a strip of gauze was passed, as was also another which was led out through the abdominal opening. Considerable shock followed, but she soon rallied. Her mental state improved daily, though it was ten days before it became normal. There was a free discharge of bile until June 20—32 days—when it ceased. The maximum temperature was 101 on the second day. The

patient was discharged cured on June 30, and up to April, 1899, had remained in good health.

It should also be borne in mind that cholecystitis is generally infectious. Normal bile is sterile, but it is easily infected, and the proof is rapidly accumulating that in the majority of cases of cholecystitis the colon bacillus and often other pyogenic germs will be found in the gall-bladder, and that even before the secretion becomes purulent the general infection may be so severe as to seriously endanger the life of the patient. Case 1 illustrates this point.

That the gall-bladder and passages are easily infected is shown by their behavior in typhoid fever. In the chapter on this subject in Keen's valuable book, it is very clearly shown that the gall-bladder contains the typhoid bacillus in nearly every case of typhoid fever. Thus Chiari reports that in 22 cases of typhoid fever, he has found on bacteriologic examination the typhoid bacillus in 19. Westcott has tabulated 74 cases of typhoid infection of the gall-bladder which have accompanied or followed typhoid fever. That the bacillus penetrates even the gall-stones is shown by the result of a hundred examinations made by Fournier, in 38 of which the typhoid bacillus was found. In this connection the following case will be of interest:

CASE 5.—Mrs. Y., aged 26 years, of good family history, for several years had complained of occasional attacks of pain in the right hypochondrium, coming on with great severity at night and occasionally accompanied by vomiting. The pain soon subsided, and she was always up and about the next day. After her marriage, in April, 1894, the attacks entirely disappeared. She gave birth to a child on April 3, 1895, and her convalescence was normal; after she had been up and about for about two weeks she began to complain of chilly feelings, pain in the back and in the extremities, and sent for Dr. E. W. Hedges of Plainfield. These symptoms increased for six days and were accompanied by a gradually rising temperature and pulse and the probable diagnosis of typhoid fever was made. There was no pain over the liver, but on May 25 a tumor of small size was palpable in the hepatic region. At the end of twenty-four hours it had increased considerably in size and was more tender on pressure. On May 29 I saw the patient, in consultation with Drs. A. H. Smith and Hedges. There was then a tumor in the right hypogastric region, which seemed about the size of a large cocoanut. There was some abdominal distension and some vomiting. There was also marked tenderness in the right side of the abdomen.

The symptoms pointed either to an abscess, the result of a perforated typhoid ulcer—the diagnosis of typhoid fever having already been made by Dr. Hedges—or to a cholecystitis. The temperature was 103.5, pulse 128. The patient appeared very ill. Immediate operation was advised, and accordingly was done in the evening, under chloroform anesthesia. A four-inch vertical incision was made to the right of the right rectus muscle. A much distended gall-bladder, exceedingly tense and slightly adherent to adjacent structures was found. The patient was turned on the right side, and the bladder surrounded by gauze compresses, a trocar and canula was plunged into the distended gall-bladder. Pale, green bile spurted out through the canula with such force that it struck the wall, six feet distant. The bladder was then opened by an incision, and a finger passed in felt as if it was entering a bag of fine gravel. Gall-stones which would have nearly filled a pint measure was scooped out, the largest being about the size of a large pea, and the smallest resembling caviar. It was roughly estimated that about 5000 stones had been removed. The gall-bladder was sutured to the parietal peritoneum and a tube inserted. The wound did well, but the temperaure and pulse rose steadily until on June 7 it reached 107. The spleen was easily palpable and rose-colored spots appeared on the abdomen. At the end of the third week the fever began to decrease and reached normal at the end of the fourth week. On June 8 a stitch was removed, and a leakage of bile, which had still persisted, ceased on June 12. The patient made a good recovery from her typhoid fever and has remained perfectly well ever since.

The indications for surgical interference in cases of cholelithiasis have in the past few years become much more clearly defined, though the importance of operation for the relief of these conditions is not so strongly impressed on the profession at large as I feel sure will be the case in the course of the next few years. The different views on this subject seem to be in very much the same stage as were those on appendicitis eight or ten years ago. It is, however, true that dilatory tactics in this latter disease are much more precarious than in the case of cholelithiasis, and the public at large have not as yet become educated to that degree that our patients insist on operation for the relief of gall-stones as they so often do for the removal of a diseased appendix. On account of this less dangerous character of gall-stone attacks, I doubt if the indications for operation will ever be so clearly defined or certainly as urgent as are those for appendicitis, and there will always be room for a considerable difference of opinion on this subject.

It is often a difficult question to decide when the physician should cease his efforts to cure by purely medicinal means and should transfer the patient to the surgeon for operative interference. A great change has taken place in our views on this subject within the past few years, and the modern physician is now apt to call upon the surgeon at a much earlier date than was the custom ten, yes, even five, years ago. The results of operation on the gall-passages have been so successful that many physicians, if not their patients, will decide that operation is preferable to a life that is constantly threatened by attacks of biliary colic or to a regimen which takes away much from the charm of living. Unfortunately, however, this view is not universal, perhaps through ignorance of the success of operations on the bile-passages or perhaps as the result of the physician's own experience with operations which have been done on some of his own patients, who have been transferred to the surgeon only as a last resort when they are thoroughly poisoned, when their kidneys have become overburdened, and when the mortality of operation must be very great. I fancy that many of the surgeons here present have with difficulty been able to conceal their indignation when after weeks, yes months, of so-called "watching," a patient, semicomatose with high fever, with urine loaded with albumin and lacking in any reparative or resisting power has been handed over to him for operation. He is often tempted to decline to interfere, but still he feels that it is his duty to make an attempt to save a life, even though the chance be but 1 in 10 instead of 9 in 10 as it should have been. The reason generally advanced for such delay is that the diagnosis is uncertain and that the case must be kept under observation until it can be ascertained with certainty that the fever, that the jaundice, that the sepsis are due to a gall-stone rather than to a catarrhal choledochitis. Is this right? Should not rather a laparotomy be advised, call it exploratory if you like, the danger of which, should the operation be fruitless, is very slight.

I speak strongly on this subject, for it has been my lot to receive several patients in this deplorable condition when there had been every opportunity weeks previously to give the patient a fair chance for recovery through operative interference. It is but lately that I saw such a case with a physician of wide experience; on my urging immediate operation he replied, "the result of the operation on the last patient I sent you was not so favorable as to encourage me to advise operative interference in this case." Let me narrate the history and allow you to judge whether it was not the inexcusable delay rather than the operation which caused the fatal result.

CASE 6.—B. B. had enjoyed fair health, with the exception of

so-called stomach attacks, until the beginning of 1895, two years before her present illness began. Since then, however, she had never been entirely well, being troubled every three months or so with an attack which gave the following symptoms: She would be seized with sudden cramp-like pain in the region of the liver and in the pit of the stomach; vomiting would follow, which was at times severe and continuous for a day or two. The pain continued generally for from twelve to fifteen hours. There had never been jaundice. The entire attack would generally continue for two to four days. Her last attack occurred on April 23, and from the onset seemed more severe than usual. April 25 she had a severe chill, followed by fever; on the 26th her symptoms were worse, and on the 27th I was called in consultation with her physician. Her temperature was then 103.5; she was very drowsy, and distinctly jaundiced. There was some resistance and tenderness over the region of the gall-bladder. I urged immediate operation, but it was decided to "watch" the patient for a day or two. This process of watching continued for five days longer, during which time the serious symptoms continued, the temperature being from 102 to 104, the mind being more or less obscured by the cholemic poisoning. The patient also vomited. On May 1 she was sent to me for operation. On admission to the Presbyterian Hospital she appeared semicomatose. Her temperature was 105, pulse 112. Her urine contained albumin and granular casts. Though the chances for recovery seemed few, it was decided to operate, and on the same day chloroform was administered and a four-inch transverse incision was made below the costal margin. The omentum was found adherent to the abdominal wall and to the edge of the liver. On separating the adhesions a shrunken, thickened gall-bladder was exposed. A stone was felt in the common duct near the duodenum. It was extracted through an incision in the wall of the duct, which was afterward closed by a catgut continuous suture. A gauze drain was led out through the abdominal wound. On May 2 the patient was stupid and drowsy, though her temperature remained below 100. On May 3 she passed but little urine, which was loaded with albumin and contained granular casts. Her temperature began to rise, and she died on May 5, from poisoning which was mainly uremic in origin.

In this connection let me briefly quote a few statistics:

Kehr performed 180 gall-bladder operations—including cholecystotomy, cholecystectomy, cystendesis, etc.—and lost only three patients. Out of 46 choledochotomies he lost 4 patients; out of 360 laparotomies done for disease of the biliary passages with all their complications he had 42 deaths—a mortality of 11.7 per cent. —and if out of this number are excluded those cases which had hopeless liver disease such as cancer, suppurative cholangitis, etc., twelve died—an operative mortality of only 3.8 per cent. Riedel, in 100 cases where he operated for cholecystititis—hydrops and eympema—lost none of his 98 cholecystotomies, the only two deaths being in cases where he had extirpated the gall-bladder. On the other hand, Naunyn reports 150 cases of disease of the biliary passages treated conservatively by medicinal treatment alone, with a mortality of 6.6 per cent., due to complications, exclusive of cancer. We must also remember that recovery in many of the 93.5 per cent. who did not die must have been temporary only, as the stone still remained.

Let us briefly consider a few of the conditions where operative interference must at least be discussed, and I will take the liberty of illustrating each variety with cases which have occurred in my own experience which will best perhaps indicate my beliefs and practice.

CHOLECYSTITIS.

This is most often due to the presence of a gall-stone, but whatever be its cause, the indications for treatment are very similar. Should the attack be acute and subside in a week or two without symptoms of sepsis or cholangitis, operation is not indicated. Should, however, the distension of the gall-bladder, with pain and some fever, persist for weeks the question of operative interference must be seriously considered. Of course, with patience the attack may subside, but on the contrary grave complications may appear. The longer the duration of the inflammation, the greater will be the disposition to future attacks. This is especially true if the inflammation has been excited by a calculus, because the chances for its passage into the duodenum, after the attack has persisted for weeks, is but slight. With this double predisposition—an altered lining membrane and a stone as an irritant—the risk of future trouble is very great. Is it not wiser, then, to end the present attack and to remove the tendency to future attacks by means of an operation, the risk of which is so slight, provided it be done early in the course of the disease before serious structural alteration in the bile-passages and neighboring viscera has taken place, as under such conditions the operation may become one beset with great difficulties and attended by a serious risk? Whether interference is to be recommended at the end of three or in six weeks will depend on the severity of the attack and perhaps also on the social condition of the patient. Case 2 already reported illustrates my views in this connection, and I will take the liberty of reporting still another case in which a cholecystotomy was done on the fourteenth day of the attack.

CASE 7.—N. E., aged 34 years, married, until present illness had enjoyed fair health. On January 13 she felt chilly and had some general abdominal discomfort with considerable distension; she was confined to the house but did not go to bed until January 15, when she was seized with severe pain in the right hypochondriac region, radiating through toward the back. She vomited once; the pain and tenderness continued with probably some fever until January 23, when she entered the Presbyterian Hospital.

On examination she complained of slight tenderness, but said that her pain had been gradually disappearing; there was no jaundice and no vomiting and the stools were of good color. Below the right margin of the ribs was felt a soft fluctuating mass, moving with respiration, which did not seem adherent, and was but slightly tender. The liver edge was felt 1½ inches below the ribs. Her temperature remained between 99.5 and 101. Slight tenderness persisted, and the tumor seemed to increase in size.

On January 27 chloroform was administered. As the tumor seemed to be situated rather far externally there was some doubt as to the certainty of the diagnosis of distended gall-bladder, therefore a one-inch intramuscular incision was made in the right loin, an inch below the border of the ribs, and on exploring with the finger it was found that the tumor consisted of a distended gall-bladder. The wound was closed and a fresh incision four inches in length was made through the right rectus muscle; the gall-bladder was distended to the size of a large cocoanut and was very tense. It was carefully walled off by gauze compresses. The patient was turned on her right side, and through a trocar plunged into the gall-bladder eight to ten ounces of a greenish bile, followed by considerable mucus, flowed out. The opening in the gall-bladder was enlarged, and the finger, inserted, felt in the cystic duct at its neck a calculus the size of a hickory nut. It was extracted and exploration failed to find any other calculus. As the gall-bladder was moderately thickened and its lining membrane unhealthy, a cholecystotomy was done, the gall-bladder being sutured with catgut to the parietal perineum and the abdominal wound closed except for a space through which a strip of gauze, which had been inserted into the gall-bladder, emerged. The patient made a good recovery, bile ceasing to flow on the twentieth day, and the wound being completely closed on February 25, when she was discharged. She has remained perfectly well up to the present time.

It must be borne in mind that both these patients were working women for whom a long illness or a state of semi-invalidism was a very serious matter.

Should at any time in the course of such an attack symptoms of cholangitis, sepsis, empyema of the gall-bladder, pericholecystitis or abscess of the liver ensue, there can be no question as to the urgency of operative interference and the delay in such cases is unjustifiable. Let me illustrate this by two cases.

CASE 8.—Mrs. N., aged 59 years, for thirty years had been

subject to severe attacks of colicky pain in the abdomen. For the past two or three years these had been so frequent that the patient had been a semi-invalid. She had scarcely dared to go out, as any excitement or undue exertion was apt to precipitate an attack. They averaged about ten a month and would last from two to twenty-four hours. During the past year they became much more frequent and more severe, were generally accompanied by vomiting, and on several occasions the patient was jaundiced. Recently their duration had been from one to three weeks. During the past year the patient had been advised by her physician, Dr. Bradshaw, to undergo operation, but she was encouraged to decline any operative procedure, by the advice of a distinguished consultant who saw the patient on several occasions. On July 1 the patient had one of her severe attacks, but it was accompanied by fever, and later by septic symptoms. The fever continued until the time of the operation, in August. She vomited frequently and became very much emaciated; had a varying temperature, from 103 to 103.5. I first saw the patient on August 8. Her temperature was then 104, pulse 120. She was thoroughly septic, looked very weak, and seemed scarcely able to endure a serious operation. The abdomen was somewhat distended and boggy; there was some tenderness and resistance over the region of the gall-bladder, and also an indistinct mass could be felt. At the earnest solicitation of Dr. Bradshaw and myself, the patient consented to operation.

Chloroform was administered Aug. 10, 1898. A four-inch vertical incision was made through the right rectus muscle; the omentum, edge of the liver and colon were found adherent. The gall-bladder was much thickened around two stones the size of a hickory nut. Another stone of about the same size was felt in the common duct close to the head of the pancreas; this was raised up by a finger passed into the lesser omentum and the stone was extracted through a vertical incision into the wall of the duct. This opening in this was sutured with catgut. The opening into the gall-bladder was not sutured, but was surrounded with strips of gauze, which emerged through the abdominal opening. Considering the patient's condition there was but moderate shock. She made a slow recovery. There was a moderate discharge of bile for fifteen days, when it ceased. Up to the present time the patient has remained in good health.

REPEATED GALL-STONE COLIC.

It is in cases of this kind that there must always be allowed a certain latitude of opinion regarding the indications for operation. In the first attack or even in the second, interference is not often indicated except complications arise, such as infective cholecystitis, cholangitis, liver abscess, etc. When, however, attack follows attack and the patient's health, or at least happiness, becomes undermined by their frequency, then operative interference must be seriously considered. The social standing of the patient may have some bearing in the treatment. If it be such that a visit to Carlsbad or that a life surrounded by hygienic safeguards can be pursued, the indications for operation are perhaps not so strong, for by such means the frequency of the attacks can be somewhat controlled and the risk of grave complications lessened. Among the "workers," however, no such precautions are possible, and the expense, from a financial point of view, the pain of repeated attacks, and the danger of serious complications must be weighed in the balance against a mortality of perhaps 1 per cent. which attends operation for the relief of this condition, when uncomplicated by serious liver disease.

There are several conditions which are of influence in deciding for or against operation. If calculi appear in the stools, and especially if they are friable, there is a better chance for spontaneous cure than in cases where the stone is locked up in the bile passages. If it does not emerge, it is probably of large size, and this is still more probable if jaundice be absent. Once trouble in the gall-passages has been excited by the irritation of such a stone or indeed by a collection of smaller stones, the chance of recurrence of the attack is great, and the safer plan of procedure is to remove the cause rather than run the risk of one of the many possible complications which occur and end so fatally in about 6 per cent. of such cases.

It is probable that a stone greater in diameter than 2.5 cm. can not emerge through the papilla into the duodenum, and the large stones which eventually pass out of the rectum have invariably entered the intestinal canal by ulceration out of the gall-bladder into the stomach or intestine. If the ulceration goes straight, the outcome is a fortunate one, but not infrequently the stomach and intestine will not arrange themselves for a safe and direct passage of the stone from the bile-tracts into their caliber, and in such cases an intraperitoneal abscess will result or a general peritonitis be started. The following case is an example of a fortunate outcome from such an ulceration stump.

CASE 9.—I. S., aged 34 years, married, was admitted to hospital Oct. 3, 1897. Until three years ago the patient had been a healthy woman, with the exception of a severe illness eighteen years before, which had resulted in loss of sight. In 1894 she was laid up in bed for three weeks with fever, severe pain in the right hypochondriac region, vomiting and abdominal distension, and ever since she has had constant tenderness below the free border of the right ribs. She has also had several mild attacks similar to the first, each one accompanied by severe pain and jaundice. When she turns on her left side she has a sensation as if a heavy body in her abdomen dropped toward her left loin. The last attack began in the end of August, accompanied by much pain, marked jaundice and some fever.

She was admitted to the Presbyterian Hospital October 3. She complained of considerable pain in the right hypochondriac region, where there was also marked tenderness, which was greatest in the midaxillary line, just below the border of the ribs. In the region of the gall-bladder there was considerable resistance, and an indistinct mass could be felt. The patient was most comfortable when lying on the right side; her tongue was heavily coated but she did not vomit. Her highest temperature was 99; pulse 88.

Operation was performed October 13 under chloroform anesthesia. A four-inch vertical incision was made through the right rectus muscle. In the region of the gall-bladder was felt a hard mass, which was found after separation of numerous adhesions to consist of adherent stomach, gall-bladder and omentum. On separating the latter the stomach and gall-bladder were found firmly fastened together over a considerable area. On separating these two structures, an opening in the stomach wall, circular in shape and about 1½ inches in diameter, was found communicating with a smaller opening in the wall of the gall-bladder. This latter organ was small and shrunken, not larger than a walnut, with wall very much thickened. It was excised, the cystic duct being ligated with catgut. The gastric perforation was found on the anterior wall of the stomach near the pylorus, the edges were trimmed and sutured.

It must be remembered, however, that it is not always the large stones which produce the severest symptoms. The case first reported developed the most serious symptoms and yet the cause was three minute calculi, barely larger than the head of a pin. It should also be borne in mind that the irritation of a calculus is the most common exciting cause of cancer of the liver and bile passages.

An argument which is at times used against operation in these cases is that if you remove the offending calculi it is probable that new ones will form and excite further trouble. A similar argument could be employed against almost any conservative operation in surgery and does not seem worthy of serious attention. Even if calculi should form, they can be easily removed by a simple operation, which should be extraperitoneal and free from risk.

JAUNDICE WHICH PERSISTS.

This does not always mean an impaction of a stone. It will often arise from a cholecystitis. In a case of prolonged jaundice it is often difficult to determine the proper moment for operation. In the past and, even though to a less extent, in the present the tendency

has been and is to delay operation too long in these cases. A reaction, however, from this dilatory and often unjustifiable treatment is beginning the show itself, and, as in many other progressive and beneficial movements, the pendulum may swing in the next few years too far in the other direction, but it still needs a vigorous propulsion, in this country at least, before it reaches an even medium position.

The main reasons for delay in the past have been due to doubt as to the following questions: Is the jaundice due to a stone or is it catarrhal choledochitis? Will not the stone be forced out of the bile-passages into the intestine by nature? Will it not drop back into the gall-bladder, where it may remain innocuous for years? In regard to the first of these reasons for doubt it may be granted that in some patients the severe characteristic pain which is caused by the passage and impaction of a biliary calculus may be absent. An anticipatory hypodermic of morphin may have cut short the pain before special attention was attracted to its severity, or the personal characteristics of the patient may have been such that the pain was not regarded as of so much importance as the severe vomiting followed by jaundice which may have been the most prominent symptoms. The following quotation is from the recent excellent address of Mayo Robson in "The Dangers of Delay:" "I think the blame rather lies in the traditions of the past that we have not yet completely shaken off, in the reminiscences of the old days when an operation was a truly dreadful business to be avoided if possible, and possibly it lies a little in that *laissez faire* policy of the old school, for there are as yet a good number of Micawbers in the world and we know that they are sometimes encouraged by the unexpected turning up.

It may be only after the expiration of two or three weeks, when the symptoms do not abate, that the probability of a catarrhal jaundice can be cast aside. When at the expiration of this time the local tenderness, the pain, the vomiting and the jaundice still persist, and especially if the fever assumes a septic course, the probability of a stone being the cause of the attack becomes very great. The presence or absence of a palpable tumor would be of the greatest importance, but unfortunately, this is frequently absent, and the longer the attack has persisted the more likely is such a tumor to be wanting, for, as has already been stated, if the impaction in the common duct has existed for a length of time, a shrunken gall-bladder is found more often than is one distended with bile. The absence of such distension is an argument which in my experience is often used against the need of operative interference. As an illustration of what I have said, let me narrate the following case which I saw on the eighteenth day of the attack and where I advised operation, which, however, was declined. The patient died on the twenty-fifth day.

CASE 10.—B. F., aged 37 years, the mother of several children, gave a history of occasional attacks of pain of a colicky nature in the upper part of the abdomen. She had, however, enjoyed moderately good health until the morning of Feb. 19, 1897, when she was attacked with cramp-like epigastric pain and vomiting, which lasted until the afternoon, when she was given a hypodermic injection of morphin. On February 20 slight jaundice appeared, which gradually deepened. From the 20th to the 28th the patient had an average temperature in the morning of 99.5, and in the evening of 101. There was great nausea and some vomiting. From March 1 to 8 the temperature varied between 99.5 in the morning and 102.5 in the afternoon. The other symptoms continued as before, except that she frequently felt chilly. On March 9 I saw the patient, with Dr. H. Her temperature was then 103.5, pulse 110; she was markedly jaundiced; her tongue was heavily coated and dry; she vomited occasionally; her abdomen was moderately distended, and just to the right of the median line in the epigastric region there was marked tenderness on pressure and some muscular resistance. I made the diagnosis of stone impacted in the common duct, and advised immediate operation. It was, however, not performed. From March 9 to 15 I learned that the temperature was somewhat higher. The patient gradually became more and more drowsy and her urine became scant and was loaded with albumin. I was asked to see her again on March 16. It was then almost impossible to arouse her. The daily amount of urine was only 13 ounces, and it was full of casts. Her pulse was 130. The case seemed hopeless from any point of view, and I declined to operate. She died on the following day, and at the autopsy, on which the family insisted, there was found in the common duct a stone the size of a pigeon's egg. The kidneys were in a condition of advanced interstitial nephritis.

I may add that the physician in attendance would not even acknowledge the probability of the attack being due to a stone, the absence of preliminary colic and the absence of a dilated bladder being sufficient in his mind to exclude the impacted stone. It is easy to criticise, but did not the long existence of fever, jaundice, and tenderness at least suggest the probability of stone and indicate operation? The argument that is often advanced against operative interference in such cases by internal physicians is that they have often seen such patients recover without operation and that they will wait for further evidence of stone. Delay in such a case seems to me to be unjustifiable. Are its dangers not much greater than are those of a laparotomy? Even if there be a chance that the symptoms are due to catarrhal jaundice are we not justified in recommending an operation, which, in case it is fruitless, exposes the patient to a very small risk and, in case a stone is found, delivers him from the danger of grave complications which would have almost certainly brought about a fatal termination?

The main object of this paper has been not so much to place on record the cases here reported as to advocate timely operative interference in cases of cholelithiasis; in the acute cases, to act before the operative mortality has been raised from 1 to 50 per cent., on account of complications arising because of delay; in the chronic and relapsing cases to prevent the patient from drifting into a life of semi-invalidism or the establishment of grave and oftentimes incurable liver disease. Such timely interference must be based upon correct diagnosis. Unfortunately, in earlier and milder stages of the disease, this is often obscured by symptoms attributed to dyspepsia. These patients, generally in early adult life, will suffer from occasional attacks of cramp-like epigastric pain, with perhaps a tendency to vomit. Such attacks at first last but an hour or two, and occur but a few times in the year. They are supposed to be due to indiscretions in diet. As the patient grows older, they become more severe and more frequent. A hypodermic injection of morphin may be occasionally needed. Abdominal distension is common, and the vomiting may become pronounced. The pain will last a day or two, and often there is local tenderness in the right epigastric region. Such is the history often given by these patients, but it frequently can be elicited only after careful questioning. So far between attacks they feel well. Later come the more grave and typical symptoms, and it is often only when these occur that the diagnosis is made, and the propriety of operative interference is discussed.

I have refrained from discussing the technic to be employed in these operations, as this will be ably discussed in other papers to be read before you. I will only say that my preference is, as a rule, for a cholecystotomy rather than for a cholecystectomy or cholecys-

tendesis—ideal cholecystotomy. In the 26 cases in which this operation has been done—exclusive of cancer—not a patient has ever been left with a permanent fistula. The average time of closure of these fistulæ has been twenty-five days, the longest having been forty-two days and the shortest eleven days. Nine cases of choledochotomy are now reported. Two of these have died, but in both those patients it may be fairly stated, I think, that the cause of death was due to the grave complications caused by delay, rather than to the operation itself. In the seven cases that survived, the duct was sutured in all, though not always completely. In three of these there was no leakage. In four the leakage ceased in an average of twenty-four and one-half days, the longest time having been thirty-two days and the shortest fifteen days.

DISCUSSION ON PAPERS OF DRS. RANSOHOFF AND M'COSH.

DR. WALKER, Detroit, Mich.—There is one point to which I wish to call your attention, and that is the suturing of the gall-bladder in cholecystostomy. I find that there is considerable leakage that remains for two months; I have seen them more than that; with the exception of septic gall-bladders, persistent empyema, I see no necessity for leaving drainage. It bothered me considerably in my first operations—the incision and the leakage that occurred—and in late operations, I close the gall-bladder and let it fall back into the abdomen. I bring this point out, and that it can be easily sutured by means of the purse-string suture. I have had no trouble.

DR. A. D. BEVAN, Chicago—I would like to make just one statement in regard to Dr. Ransohoff's opening statement, to the effect that little is known of the etiology of gall-stones. I think a great deal is known. I believe that gall-stones are mycotic in origin. This has been demonstrated not only clinically, but experimentally. Clinically, I always look for a history of typhoid or an intestinal infection, and in a number of cases I have found typhoid bacilli in the gall-bladder in these operations. Experimentally, in French laboratories (Gilbert and Houriner), gall-stones have been made in living animals by introducing into the gall-bladder pure cultures of typhoid and colon bacilli. I do not know of any concretion in the body about which so much is known in regard to its etiology as gall-stones.

There is another point to which I would like to call attention and that is surgery of the common duct. The incision which I reported at this Section of the last meeting, I have since employed in ten or twelve cases, and have found it to be of so much value that I would like again to emphasize its importance. Whenever we undertake a gall-stone case, it is impossible to say whether the case will be simple or whether a very extensive amount of adhesions will be met, whether we will have simply to deal with the gall-bladder or the duct. On that account, it is desirable to plan an incision which can be so enlarged as to meet any indication that might arise. The S-shaped incision I developed and reported at the last meeting. (Illustrating diagrammatically). We will allow this to represent the costal starch; here the umbilicus and the inguinal or pubic ligaments. It is planned in this way for ordinary work as an exploratory laparotomy. A straight incision is made through the outer border of the rectus muscle. If adhesions are met with, if a common-duct stone is found and a wider field is required, the incision is enlarged, or, if it is a simple cholecystostomy, the incision is represented as a straight one. If it is a complicated one, when the stone must be removed from the common duct, the incision is enlarged in this way; an addition is made above and below, so as to make an S-shaped incision. I did quite a good deal of work in this line, and it is surprising to find how extensive a field of operation is made by this incision without any tension, when this line of incision is opened by retractors, and there is a wide field in the gall-bladder, and the common ducts are all explored. I would like to emphasize the value of this, and that we are not apt to have hernia following an incision of this kind. The extended portions of the incisions run parallel to the nerve-supply of the abdominal wall, and I have found in cases where I have employed it that there is considerable contraction following the incision. It is carried up well against the costal arch, and I have had no hernia in this line of work, whereas, when I used the outer border of the rectus—the long, straight, or rectangular—I had three hernias follow.

DR. ROBERT MORRIS, New York City—For some time I have been closing gall-bladders more than previously, and one method of disposing of the gall-bladder in a certain proportion of selected cases, which I have recently employed, will be of service. This represents the gall-bladder (illustrating): this the sutured incision in the fundus—a puckering-string suture is thus carried around the gall-bladder; the gall-bladder is inverted, so that the fundus impinges on the cystic duct thus (indicating diagrammatically). The puckering string has inverted the fundus so that it practically obliterates the gall-bladder. In a certain proportion of cases in which the gall-bladder is freed from adhesions, this method is applicable.

DR. J. B. MURPHY, Chicago—When will we operate? What cases are operative cases? I was pleased to notice in Dr. McCosh's paper that he urged the early operation, and was also pleased to note the tenor of his paper, that the danger was not from cholelithiasis, but from the pathologic conditions induced by the presence of calculi. Therefore if the danger is not from the disease itself, from the presence of calculi, but from the pathologic conditions produced by them, the sooner they are removed, after they have commenced to cause the symptoms, the more safely they may be removed, as the pathologic changes will be less.

The cases in which there is immediate danger, and which demand immediate operation, may be divided into two grand classes: 1, primary attacks with a virulent or malignant infection of the gall-bladder, and, 2, acute obstruction and infection of the common duct. These cases are, fortunately, not common, but they are sufficiently dangerous to demand immediate operation. Can the diagnosis of these conditions be made? Yes! Can it be made with exactness? Yes! With sufficient precision to justify, even demand, an operation that, in itself, involves but a small element of danger. In these cases the attack is sudden pain, accompanied by high temperature, associated with vomiting; if the cystic duct is obstructed there will be great sensitiveness, but less spasmodic pain: if the common duct be involved, no sensitiveness but great pain and jaundice are present. The patient usually has symptoms of severe septic intoxication. These symptoms mean certain pathologic changes? If these symptoms are referable to the gall-bladder, there is sepsis and obstruction of the cystic duct, and, as a result, increased secretion and retention under pressure, so that both biotic and toxic effects of the microphytes are at the greatest advantage to produce gangrene and perforation of the gall-bladder. How long a time does this require? A complete gangrene of the gall-bladder may occur as early as three days from date of onset. I have observed two cases in which there was gangrene of the gall-bladder within three days, and both in primary attacks.

The second class of cases, obstruction of the common duct, associated with high temperature, the onset of pain followed early by high temperature, means what? Obstruction with jaundice, obstruction of the common duct with infectious involvement of the lymphatics, of cholanges, chills and fever, dry tongue and delirium, the patient rapidly succumbing to the toxic effects of infection. This pathologic condition demands the immediate relief of the tension under which this infected material is retained—the drainage of the gall-bladder: unless it be the gangrenous type of infection or long involvement of the cholanges there will always be a rapid cessation of the toxic effect on relief of the tension. Therefore, the indication is not to perform cholodochotomy, but to simply relieve the tension of the bile-ducts by the shortest and simplest operation, cholecystostomy, as any prolonged operation under these circumstances would prove fatal.

DR. E. D. FERGUSON, Troy, N. Y.—Apropos of one of the points discussed, as to whether we are to close the incision in the gall-bladder at the time of the operation or leave it as a cholecystostomy, there is one principle that has not been referred to, i. e., as to whether the presence of the gall-stone itself is the special pathologic condition for which we operate. The fact is we usually operate for gall-stones, and it is desirable to be sure that we get rid of them. There is no way in which we can be absolutely sure that the gall-passages are clear. We may take out several—a great many and yet leave one or more behind. This is brought more forcibly to my mind by one case in which I expected to find a gall-stone. I was confident that there was one and yet I could not find it. I hunted the ducts thoroughly: I explored the gall-bladder internally and externally and while I think I have a fairly good sense of touch in my fingers, yet I could find no gall-stone. I did a cholecystostomy and two or three days after a large gall-stone appeared at the opening. I do not believe that the annoyances to the patient connected with cholecystostomy are such as to cause us to close the

wound at once, with a possibility that we may leave gall-stones within the gall-bladder.

DR. THOMAS, Pittsburg, Pa.—I do not wish to criticize the papers, particularly as they were written by men of vast experience, but there is only one point and that is as to the first speaker referring disparagingly to the ideal method. It appears to me that if the operator has the courage of his convictions and is satisfied that the gall-bladder is empty and that the ducts are free, I do not see any objections to closing the gall-bladder. I have a specimen from a case of the ideal operation on the gall-bladder. The patient died of intercurrent disease seventeen days after the operation. I succeeded in getting a post-mortem examination, and removed the gall-bladder. If you are satisfied that the gall-bladder is empty, that the ducts are empty, close the gall-bladder and drop it in. The method in this case was with one running-stitch, first taking up all the tissues excepting the mucous membrane, and then going back with a Lembert suture and dropping it in.

DR. M. F. PORTER, Fort Wayne, Ind.—There are two objections to closing the gall-bladder immediately, and these apply also to immediate closure of incisions made in the common duct. In the first place, permanent or long-continued drainage is oftentimes necessary to cure a case after a stone is removed. There is oftentimes left cholangioitis, which is quite sufficient to completely obstruct the duct, and this obstruction can be cured only by permanent drainage, or drainage, if you please, that is kept up for a considerable length of time. Again, there are cases that occur in which the plugging of the common duct is due to this cholangioitis, with or without the formation of putty-like mucus, which cases recur after the original operation of cholecystostomy, and which are relieved by a second cholecystostomy, and then again recur and die. Such cases require permanent drainage. Another objection to the ideal operation is that one can never be certain that the ducts are patulous. If there is a man who can tell absolutely, positively, when the common duct is entirely free from disease, I want to know who he is, and I want to go to him and have him teach me how to do it.

DR. FRANK WARNER, Columbus, Ohio—If we undertake the operation of cutting into the gall-bladder early, we are going to have occasion to revise our statistics of the mortality of the operation. How many of you hesitate when anything is the trouble, or suspected of being the trouble, with the appendix, to go in at once? What is the case when there is any trouble about the gall-bladder? You hesitate and hesitate until there has been an opportunity to add a very great deal to the risks which we run, not from the process itself, but from the results which are called for by the operation. There is one thing that I want to specifically condemn here, and that is the administration of olive-oil, in the hope that you are going to get rid of any very considerable obstruction around the gall-ducts. So far as I am personally concerned, I feel that you might as well pour that oil on the outside and rub it over as to put it on the inside. It is only a relic of barbarism, only a relic of ignorance that has been handed down to us from year to year by men—and some are refusing or hesitating to condemn this. But while my experience has been very small, as compared with that of many, yet it has been sufficient for me to stamp an utter disapproval on any such procedure. With that limited experience, I believe that we will do better to enter the gall-duct earlier, not wait, not make so many tentative plans to get rid of the obstruction, but enter earlier, and we will meet with much better success, and will have an opportunity to revise our statistics of the death-rates and make the operation a more favorable one to undertake.

DR. W. L. RODMAN, Philadelphia—I rise to ask the several essayists, when they close the discussion, and others who may speak on the subject, if they will state whether they have seen gall-stones in the full-blooded negro. In an analysis of 106 cases operated on by a surgeon in Louisville, only one was found in a full-blooded negro. I think some of the Southern surgeons who are here have seen gall-stones, and I would thank any one who goes into the discussion to answer that.

DR. J. E. MOORE, Minneapolis, Minn.—My own experience teaches me that there are unmistakable cases of cholecystitis in which there are no gall-stones, and some of these cases require operations, particularly those complicating typhoid fever. Right along this line I would follow Dr. Warner and urge the necessity of exploratory operations in these cases, just as we are always ready to make them in cases of appendicitis. Why should we hesitate to go into this region any more than into any other region? I have been in the habit of doing this operation, and have never had an occasion to regret it, and would recommend to you exploratory incision in these cases. I have been very agreeably surprised in the instances in which my colleagues and I have operated to find our diagnosis corroborated as soon as we got into the abdominal cavity.

DR. H. O. MARCY, Boston—Since I am on record as the first to have removed a gall-stone from the common duct, having sutured the same as well as the gall-bladder, and closed the abdominal wound without drainage, it is very natural that I should advise this method of procedure, but we can not emphasize too greatly the importance of absolute knowledge that the canal into the intestine is unobstructed before we close the opening made for the removal of the calculus. If we may be certain that the biliary passages are unobstructed, after the proper suturing of the same, I can not doubt that the primary closure of the wounds will make the operation safer than by leaving an external fistulous opening. Conditions will not seldom be met with where this ideal operation can not be safely performed, and then we must use drainage.

In gall-bladder operations I consider the modified S-incision, for the reasons advocated, an important aid. Until recently I have divided the abdominal wall in a line parallel to the lower rib, which certainly permits easier access to the gall-bladder than an incision parallel to the rectus muscle. The modified S-incision is a happy medium between the two, possessing the advantages of both. There can be no question that operative measures for the relief of biliary obstruction are not alone justifiable, but that to-day we are in a position to define the conditions demanding the operation and emphasizing the importance of surgical intervention at a very much earlier period than at first seemed warranted.

DR. W. E. B. DAVIS, Birmingham, Ala.—In answer to Dr. Rodman's question, I had one case of obstruction of the gall-bladder—the common duct—where the stone was not found, in a pure negro, 70 years of age.

DR. JOSEPH RANSOHOFF, Cincinnati, Ohio—I want, in the first place, to correct Dr. Moore in his idea that I insisted on the fact that gall-stones are the only things that we are to operate for. I have a number of cases in which gall-stones were not found, and I do not think I operated needlessly.

In reference to the etiology of gall-stones, as spoken of by Dr. Bevan, I am not ignorant of the fact that gall-stones have been produced by the use of bacteria injected into the gall-bladder, nor occasionally to form around a foreign body, but for the most part, they have not been found about a foreign body. I contend that we know very little, except after an infective process like typhoid fever, but of the time in which they form—the period—I think nothing is known, and that is an important point.

In regard to the ingenious suggestion of Dr. Morris, to close the gall-bladder by inverting it, the speaker believes that it originated more in the study than at the operating-table. When the gall-bladder is small and contracted, inverting it is entirely unfeasible. Even when the gall-bladder is of normal size its upper wall is so attached to the under surface of the liver that without dissecting it therefrom, inversion of the fundus can not be done. It is a thoroughly feasible procedure in enlarged gall-bladders, but these gall-bladders are the ones that ought not to be closed, but drained, and therefore, this suggestion of Dr. Morris does not seem to me a good one.

My main reason for objecting to ideal cholecystotomy is that I have had one patient die from it. Furthermore, we do not know whether the common duct is open or not. In the vast majority of cases you can not pass a probe through into the intestinal canal. Nor do we know absolutely that all the stones have been removed. In the vast majority of cases of operations for the removal of the gall-stones, you see nothing of bile; there is no obstruction of the duct after the first dressing, then everything is flooded with bile. The backward pressure of the bile, when the swelling of the mucosa of the cystic duct subsides after operation, is often enormous; should the sutures then fail to hold, a catastrophe is imminent.

One other thing, in regard to Dr. Murphy's statement that all cases should be operated on at once when we have obstruction of the common duct. The man with the largest experience in gall-stone surgery, Kehr, with a record of 409 cases and 32 common-duct stones, says, in acute common-duct obstructions, do not operate, but wait.

Contagiousness of Acute Otitis of the Middle Ear.—Lermoyez reports that in seven out of twenty-one cases in his experience, a companion, a sister or maid also became affected with an otitis of the same character as the first case, within two to seven days, or two weeks in one case, without a cold or any appreciable cause except contagion from intimate contact. Another argument in favor of his assumption is the frequency of otitis in general hospitals and its rarity in private practice. He therefore urges isolation of all cases of acute otitis, and warns persons with la grippe or any other infection to keep away from them.—*Presse Med.*, August 12.

OUR TUBERCULAR PATIENTS.

WHOM TO SEND AND WHERE TO SEND THEM.*

BY J. FRANK McCONNELL, M. D. (TOR.)

LAS CRUCES, N. M.

That we have such patients no one will deny, for the age of the millennium has not dawned, and the sad procession of blighted lives is still wending its way toward the beckoning hand, till science shall have called halt.

Who does not recall, in the student days of even the youngest of us, the sadness with which our preceptors were wont to recognize the presence of consumption in young and promising men and women, the particular bright shining lights of each one's social sphere? Let me quote Allbutt of Cambridge in this particular: "Well I remember," he writes, "the fatal—for such it then seemed—the fatal note of the 'consonating râle'; how it impinged on the unwilling ear like a knell. For they nearly all died in those days." But surely this is a gloomy picture; is there not a brighter side? Can not some new light to be shed upon it, that the faded color may be restored? Can it not be placed amid new surroundings, that the darkness may be dispelled? I believe this is possible. I believe the dawn has passed and we are already standing bathed in the light of the noontide of science.

With Koch came the great victory—our certain early diagnosis; with diagnosis came treatment, worthy of the name, for it is indeed prophylactic as well as active. The profession quickly became alive to the necessity of pure air and sunshine for such patients; they were aware that certain localities excelled in these essentials; the Continent became studded with *Kuhranstalten* and *Liegenhallen;* thither the patients were sent, the early and the late, the vigorous and the hectic, and as a result of such empiricism the disappointments were many; then came discrimination; *whom to send,* was the question uppermost in the professional mind, and on this topic I should like to add my quota, giving my opinion and experience in the matter.

Let me commence with this query: Who are the patients in whom the tubercular process is arrested? In nearly every case they are those in whom an early diagnosis of the existence of tubercle has been made, and who as a consequence have immediately been placed amid suitable environment in order that the curative process might be established. There are those present, I am sure, who could place their hands on a dozen young adults, who have, as it were, been snatched from the imminent peril of certain death, as the result of the skill which their medical attendants displayed in detecting the focus of disease *and providing for it.*

It has been the cause of great satisfaction to me to see annually, young men and women already presenting clinical evidence of their tubercular infection, coming out to New Mexico and there regaining health and strength, converting a hypotrophic constitution into an orthotrophic one, and oftimes becoming stronger than ever before. But, again let me ask: What class of patients give these results? The early cases; those who as yet have no appearance of invalidism, in whom the slightest token of chronicism is unnoticed by the experienced observer, who within themselves are yet almost unconscious of any serious lesion, but by reason of some annoying symptom, or acting on the advice of friends, have been led to consult their physician. The medical adviser, thus consulted, if he wish to prove himself worthy of the confidence entrusted to him, will make a careful examination, microscopic as well as macroscopic, and will, as a result, honestly advise his patient as to his true condition, not engendering the false hope of "nothing wrong," "bleeding from the throat" or a "bronchial irritation following la grippe," if inwardly he believes and knows otherwise, but, encouraged by the early discovery of trouble, will advise, if circumstances permit, climatic change, even if it be only the outskirts of the city or locality in which the patient resides. It is such cases that improve and live to thank the physician that has proved himself such a benefactor.

There is another class of patients that we who practice in health resorts meet very frequently: those unfortunates in whom the disease manifests itself with that severity which so puzzles the pathologists, and those still more unfortunate, who have been allowed to let the day of their deliverance speed by, till, beyond all help from climatic influence, they are sent away from home and friends, and all that that means, only to find death in strange places. Such scenes are of altogether too frequent occurrence.

Therefore the patient most amenable to climatic influence still possesses a fair portion of activity and bodily strength; the hand of disease has not as yet laid heavily upon him; the tubercular lesion is slight, if any; perhaps nothing more than a little cough, with hemoptysis has called attention to his lungs; or more favorable yet, some evidence is found of the pre-tubercular state—that condition of hypotrophy so frequently seen, yet so illy understood, since it lacks any well-defined form—and as a prophylactic measure, climatic change is earnestly advised.

When the examining physician has fully determined that his patient should seek other climes, then should he firmly impress the fact, not allowing himself to be influenced by the importunities, either of patient or friends for very frequently much valuable time is lost—irrevocably in many instances—by procrastination following on carelessly given or insufficiently emphatic advice as to the dire necessity of immediately seeking better suited climatic conditions. Well do I know this fact from personal experience. Give me the data as to the time lost between diagnosis and the surrounding of the patient with suitable conditions, and I will make the prognosis.

A word as to that peculiar condition so frequently met, viz., fibrosis or fibroid phthisis; it is a great—and I regret to say all too common—error to send such patients to high altitudes, there to be dosed with strychnia till compensation failing, they are advised to seek a lower altitude, or return to sea-level. Such cases, if sent to very moderate altitudes, invariably do well, the heart accommodating itself to the slight addition, when it would not be able to do so under the great disadvantage imposed on it by a higher elevation.

Having found our patient, where shall we place him that he may receive the utmost benefit in the shortest possible time, that he may be able to earn a decent competency and obtain the luxuries as well as the necessities of life? In order to settle this rather difficult problem it is necessary to have a knowledge of the localities which are favorable to fulfillment of what I have outlined on another occasion[1], as the object of climatic change: and again, the accommodations a patient will have dur-

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

[1] Climatic Therapy of Pulmonary Phthisis. Canada Practitioner March, 1897.

ing his journey, and at his destination, should be points of careful consideration.

It has been well said that tuberculosis is a disease of civilization, and that the nearer one approaches to the primitive states the less frequently does it appear, and again, that pure air, equability of temperature, and maximum amount of sunshine are the trinity which make up the ideal "breathing spot" for the tuberculous. With these premises, I think that further consideration will tend to develop that which may be found in every part of the country, and localize those particular regions, which are especially favored from a climatic standpoint.

A leading work of the day, discussing this subject, states that, given the three requisites just mentioned, it does not matter where the location is, provided the patient lives an outdoor life; seemingly it does not occur to the author that only particularly greatly favored localities possess these necessary adjuncts to successful climatic treatment, thus making practical the carrying out of his proviso.

In order to obtain pure air, maximum amount of sunshine, and equability of temperature, at one and the same time in a given locality, it is necessary to seek a climate which is noted for its dryness, and which has at least a moderate altitude, for it is in such regions that we see almost perpetual sunshine, which, with the altitude, insures purity of the atmosphere, provided we bear in mind our primary axiom—the keeping close to primitive conditions—which is nothing less than avoiding over-crowding both in the locality chosen and the residence selected.

In regard to dryness, I think it is very generally conceded that it plays the rôle of something more than a mere "useful adjunct," as a well-known authority puts it. Clinical testimony is overwhelming in the remarkable results obtained over the tubercular process in the arid regions. You will therefore see that we now have in this ideal climate a locality which can boast of pure air, abundant sunshine, the right altitude, freedom from undue moisture, and sudden and severe changes of temperature. We have built up an ideal, yet do we possess it, almost at our very doors—New Mexico.

It is to New Mexico, and especially to that portion of it known as Southern New Mexico, that I particularly wish to invite your attention, for here we have a moderate altitude—3800 feet—a valley fair to behold, surrounded and sheltered by mountains and foothills, a country of little rain—averaging yearly about eight inches, and frequently less—which, accommodating itself to the wishes of our winter visitors always falls in summer; a land of perpetual sunshine—348 sunshiny days in the year—with a winter that is unrivaled in possessing the necessary qualifications of climatic therapy.

New Mexico has been aptly called the land of sunshine and sand, which name warrants our assertion to supremacy in the matter of cloudless skies and absence of humidity; it is true that in consequence we have dust in certain localities, but away from the centers of population, on some of the many fruit and alfalfa ranches, which are the best places for invalids, there is little if any dust, the alfalfa fields doing good service in preventing this annoyance. As a winter climate for tubercular patients, Las Cruces, the center of the valley of Southern New Mexico, presents an ideal location. Good accommodations may now be secured on every side; especially is this true of the suburban parts.

It is but fair to state that the warm genial months of winter give place to warmer days, that are anything but genial, in July and August. Yet the nights are cool so that refreshing sleep may be procured. A few miles by wagon or train into the mountains, or to the northern part of Arizona and New Mexico, and we have a summer climate that is just as cool as one may desire, the patient being able to regulate the temperature at his fancy.

As a rule I advise patients who can tolerate high altitudes to travel northward, but many will find the nearer resorts, while warmer, better suited to their physical capabilities. It is unfortunately true that no one place will suit every phase of the tubercular diathesis, since no one place will suit every temperament. Yet, I believe that in a land of almost cloudless skies, with warm genial winter days, absence of rain and snow, and accommodations suitable to all requirements, the well-selected, early tubercular subject will improve and be quickly, and in the majority of cases, so permanently restored to health that in a few years he will have forgotten that he ever possessed such a thing as pulmonary tuberculosis. Therefore to sum up, we have seen:

1. The great aid toward permanent arrest, i. e., cure, of the tubercular process which properly selected climatic treatment gives.
2. The criminality of delay in affording our patients such an opportunity.
3. The wherefore of the recovery of early cases.
4. Why late cases should be kept at home.
5. The wonderful adaptability of the climate of Southern New Mexico, and the enviable position which it possesses as Nature's great sanitarium, where unfortunate possessors of the tubercular taint may defeat the ends of the grim destroyer and be saved to society, to act as landmarks to the diagnostician when he discovers the evidence of disease in some patient who less than a quarter of a century ago would have been doomed to death, but who now, thanks to the means of an early diagnosis, at the disposal of every scientific physician, remains to become vigorous and strong, blessing the name of the man whose knowledge has borne such fruit.

TREATMENT OF ENDOMETRITIS BY DRAINAGE AND IRRIGATION*.

BY AUGUSTIN H. GOELET, M.D.

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NEW YORK CITY.

It is too often the custom to regard every discharge from the uterus as evidence of endometritis and to submit the endometrium to vigorous treatment either by caustic or astringent applications or curettage or both. This is unscientific and an error both in diagnosis and treatment. Even when the diagnosis of endometritis is correct, such measures, as they are usually applied, are not effectual, and they submit the patient to needless risk and the uterus to much unnecessary violence. If every case so maltreated was actually an endometritis, there would still be no justification for the vigorous and even harsh measures sometimes blindly employed against it. I believe I am not far wrong when I say that if a cure results after such treatment it is not because of it, but in spite of it.

If the case is one of simple hyperemia of the endometrium, with hypersecretion or one of so-called cervical catarrh, both of which may be mistaken for endometritis, the traumatism such violence inflicts opens the way for infection, conveyed to the cavity perhaps from the cervix, where infective germs frequently dwell in an innocuous

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

state when undisturbed. In this manner a comparatively harmless condition may be transformed into a very grave one. It is little wonder that some of our methods have been referred to as "gynecological trickering." It is trickering of the worst form, and can not be too strongly condemned.

As an actual fact endometritis is not so common as is generally supposed, and hyperemia of the endometrium is often mistaken for it. This is a condition very readily cured by removal of the general pelvic hyperemia on which it depends and obviating the cause or causes which give rise to it, and local treatment of the endometrium is unnecessary. I have found bipolar faradization applied to the vagina the most prompt and most effective method of treatment.

In the other condition often mistaken for endometritis, so-called cervical cartarrh, the diseased process is, as a rule, confined to the canal of the cervix and does not extend beyond the internal os unless the affection, usually a passive type, is conveyed to the cavity above by introduction of instruments for diagnosis or treatment or for operations, such as dilatation and curettage. The condition is usually an infection of the tubular glands of the mucosa lining the canal of the cervix, and manifests itself by a discharge, sometimes inoffensive in amount and insignificant in appearance, yet in it may be found the staphylococci, streptococci, or gonococci, either alone or together. They appear in small numbers in the ordinary discharge, but when the surface is irritated the discharge is increased and their number is greatly multiplied. This means that they inhabit the glandular structure of the mucous membrane and few escape to the surface with the ordinary secretion, the orifices of many of these glands being obstructed, but under unusual stimulation the pent-up secretion is thrown off in greater quantity and with it myriads of these germs which otherwise would not find their way to the surface.

In such a condition the cavity of the uterus above should not be invaded even for the purpose of diagnosis until all evidence of germ growth, as revealed by the microscope, has been effaced. The penalty of violation of this rule is risk of infection of the endometrium, which previously may have been exempt.

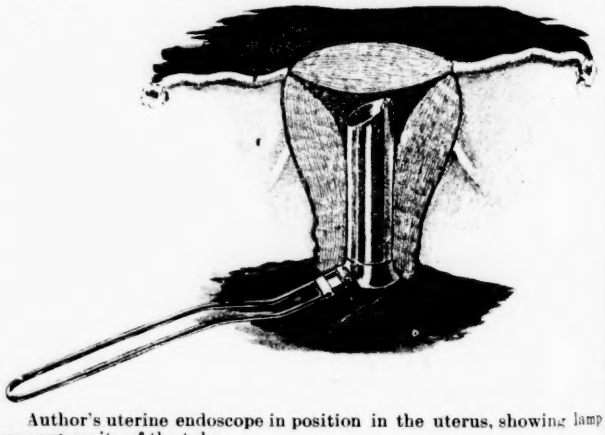
Obviously, the most rational manner of dealing with such infection, which is not confined to the surface of the mucous membrane, but has invaded the glandular structure beneath, is to stimulate the glands to throw off the pent-up secretion and to irrigate the surface frequently with a non-astringent, non-irritating solution to remove the secretion and prevent migration. This process of "drainage of the glands," if persistently maintained, will cause the germs to be thrown off too rapidly for effective propagation in the glands, hence their growth is checked and they become eventually exhausted.

The same holds true of inflammation involving the mucous membrane of the cavity above the internal os. The glandular structure is involved and no form of application to the surface can accomplish a cure unless its effect is to establish and promote drainage of these glands. If it defeats drainage it must aggravate the condition. Applications that coagulate the secretion on the surface block up the orifices of the glands, and if the action penetrates beneath the surface it is all the more objectionable. Hence astringents and caustics, though they may act as stimulants, defeat drainage rather than favor it, and are therefore contraindicated.

Curettage is sometimes of service both in the canal of the cervix and within the cavity of the uterus, but it should not be employed indiscriminately. To accomplish the most good it should be employed within proper limitations, and caustics should not be applied afterward, since they produce necrosis, which may result in atrophy of the mucous membrane or agglutination of the sides of the cavity. The curette should not be used in a manner to destroy or remove tissue unnecessarily, or to inflict needless traumatism. It is very unwise and unnecessary to attempt to remove the entire mucous membrane down to the muscular structure, therefore the sharp curette is seldom or never required within the uterus, but it may be used in the canal of the cervix and at the internal os, where the tissue is firmer. The dull curette with rigid shaft, will, if properly used, remove everything that should be removed from the surface of the endometrium in endometritis. The object of curettage in these cases is not to destroy the mucous membrane, but to remove projecting granulations or superflous tissue which may be blocking the orifices of the glands and preventing drainage. Probably much of the benefit that accrues from curettage comes from stimulation and compression of the glands from passing the curette over the surface of the mucosa. This forcible expulsion of the secretion would as much as anything remove the obstruction in the gland ducts.

Author's dull curette with rigid shaft, showing front and back of the curetting end.

Since it is not in itself curative in these conditions, curettage should be regarded only as a preliminary step in the treatment. Evacuation and drainage of the glands, made possible thereby, must be maintained and frequent irrigation with some non-astringent, non-irritating solution, through a return flow irrigator, must be employed until no vestige of disease remains. This is the only positive way of effecting a complete cure.



Author's uterine endoscope in position in the uterus, showing lamp near extremity of the tube.

An accurate diagnosis is an essential prerequisite for successful treatment, more especially in these inflammations of the uterus, and this can only be made by careful examination of the discharge under the microscope and inspection of the endometrium by means of the uterine endoscope.

It is particularly necessary to inspect the cavity both before and after submitting it to curettage: before, to decided the actual necessity therefor, and after, to determine the completeness or incompleteness of the work.

The successful application of the endoscope for the purpose of diagnosis has been made possible by employing an electric lamp within the tube near the extremity

for direct illumination of the cavity, and by attaching a megaloscope for bringing out the details of the surface after the plan of the Valentine urethroscope.

The instrument is adjusted to the interior of the uterus in the manner shown in the accompanying drawing. The lamp is operated by four dry cells, which last for a considerable time—thirty hours—and may be renewed at the small cost of $1 when exhausted.

The extremity of the endoscope is oblique, so to more satisfactorily expose the orifices of the tubes and the sides of the cavity. The lamp is placed near the extremity of the longest side of the tube, so as to direct the light on the whole surface exposed to view by the opening of the tube. By turning the tube around in the cavity all parts of the cavity may be inspected, including the fundus, the sides, etc., as the tube is slowly withdrawn.

The lamp is detachable, and is placed in position after the tube has been inserted to its full length. The endoscope tube is introduced with obturator after proper dilatation of the canal. The obturator is then removed and the lamp inserted. If there is much secretion of blood in the cavity, this is first sponged out by means of an applicator with the end wrapped with absorbent cotton, then the lamp is inserted. If it becomes necessary to dry the surfaces after inserting the lamp this may be done without removing it.

There is not enough heat developed by the lamp to make it objectionable in the uterus for a period sufficient for thorough inspection of all parts of the cavity.

116 West Seventy-fourth Street.

THE IMPORTANCE OF A KNOWLEDGE OF THE DEVELOPMENT OR EVOLUTION OF THE CHILD IN THE PREVENTION OF CHILDREN'S DISEASES.*

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In this age of world-encircling intellectual activity in which mind has penetrated so many of the secrets of Nature, and by directing its forces, has secured such a great dominion over matter, when the thought and discoveries of the whole world are at the command of each individual worker, we are prone to lose sight of the fact that while mind controls and directs matter, matter, on the other hand, exerts a powerful influence on the normal development and integrity of mind.

Surrounded as we are by free schools, almost universal educational facilities, and a public sentiment which, subordinating nearly everything else to the cultivation of intellect, rushes the child, scarcely out of the cradle, into the kindergarten, and thence through various grades of schools, colleges and universities, until he or she emerges at the age of 25 or 30 years, a finished product of our modern educational system, we are apt to forget that cultivation of the intellect or cramming the mind does not comprise the whole of development, and, that, unless very carefully guarded, by overlooking or ignoring the proper training and development of the body as well as the laws governing the development of the mind in the race, such training may do infinitely more harm than good.

The child, instead of being "a little man," with the same thoughts, feelings, inclinations, capacities and powers, only on a smaller scale as a man, is, in truth, an altogether different being, and may be aptly characterized in his various stages of development as an epitome of the development of the race. He passes through the successive stages of savagery, barbarism and semicivilization before attaining to the full civilization in which we live. During this progress the spectral forms of his dead ancestors surround him on all sides, and the mighty mental accumulations and beliefs of a long-forgotten past impress on him the various stages of credulity, inquiry, faith and full-blown reason through which these ancestors have passed.

With these facts fully impressed on the mind, and thoroughly grasping the great truth that a symmetric development of all the powers—physical, intellectual, and moral—is necessary to the greatest happiness and welfare of the human being, let us see whether our habits of living, and educational methods, accord with these fundamental laws of development, and if not, in what way the physician can help to point out the remedy.

As before indicated, the child is not "a little man." In both organization and function there are great differences between the two, and hence their nature and training should be different, and made to conform to their organic and functional capacities. The glands, heart, lungs, muscular and osseous systems of the child possess a high degree of organic and functional perfection, and this would logically seem to indicate that the proper exercise and development of these various organs is the rational and proper occupation of the child during childhood and early youth.

In support of this inference it may be said that in the savage and barbarous stages of development of the race to which the young child corresponds, these organs and functions are developed to a high degree of perfection. Such things as weak flabby muscles, flat chests, failing hearts, and impaired digestive organs, were unknown, because their existence would have meant extinction to their possessors.

The muscular, osseous and respiratory systems were developed to a high degree of perfection, which was attained, not by disuse and confinement in illy-ventilated rooms for a considerable part of the day and the whole of the night, but by a careful and systematic exercise of the organs undergoing development but while the physical organization was systematically developed, and attained a high degree of perfection, and the special senses, especially the sight and hearing, were carefully trained from the earliest childhood until they became phenomenally acute among savage races, the intellectual development in many particulars remained in a rudimentary state. The powers of continuous mental application, abstract reasoning, and broad generalization were unknown to the savage, and were only acquired by the race through the slow, gradual process of evolution.

In support of the proposition that the young child represents and epitomizes the far-away savage stage of the race from which he sprang, we have the further fact that while the organic development and functional capacity of his heart, lungs, glandular organs and muscular and osseous systems have reached a high degree of perfection at birth, on the other hand his nervous system is in a very immature and undeveloped state. The brain of the young child, as compared with that of the adult, contains a larger percentage of water, is softer, more easily irritated, and is much sooner fatigued on mental exertion; but on the contrary the perceptive faculties, the development of which depends on the training of the

*Presented to the Section on Diseases of Children, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

special senses, are keen and alert, and attain a high degree of perfection if given an opportunity in childhood to develop in accordance with the laws impressed on the race by Nature throughout the ages.

With these principles clearly in mind, let us see what application can be made of them by the physician in warding off physical and mental ills, and helping the individual and the race to attain the highest physical, intellectual, and moral perfection and happiness.

When we consider the phylogenetic history which the child represents at the time of its birth, the long eons of time, and the enormous evolutionary progress through which it has already passed, we can have some appreciation of the force and wisdom of a remark once made by Dr. Oliver Wendell Holmes, that, in order to treat the child successfully, you ought to begin two hundred years before it was born. So strong are hereditary tendencies that, no matter how favorable the environment may be, they influence, either for weal or woe, the individual and his offspring for generations. This brings us to the first fundamental proposition, viz.: That in order to reach the highest development and the most complete living, the individual should be well born; that is, both parents at the time of procreation should be in good health, and free from all taint of tuberculosis, syphilis, carcinoma, or other hereditary or communicable diseases or constitutional predisposition to them. Then, during pregnancy the mother should obey the laws underlying good hygiene and correct living in the matters of proper clothing, diet, exercise, and the avoidance of all stimulants and narcotics, as well as late hours and undue emotional excitements which have a peculiarly pernicious influence on the rapidly developing fetus. One night of dissipation may cast a shadow over a thousand years of the phylogenetic history of the rapidly developing embryo.

After birth the infant should be nourished at the maternal font designed by Nature for its sustenance, and if the mother has been properly raised and cared for during pregnancy, she will in almost every instance have an abundance of milk, and it will be a rare thing, indeed, to be obliged to feed the child on cow's milk, or the many nostrum foods with which the market is flooded. Then, too, it should be zealously guarded against poisoning by stimulants and narcotics in any form. Opium and alcohol in all their varied forms, with their siren and delusive promises, should be forever banished from the nursery, and the child be given an opportunity to select its own drug habits in later years without having them forced on it at this early age. I want to make one suggestion here. As you all very well know, water is the great solvent on which the system depends to convey nutritive material to every cell and tissue of the body, as well as to remove their accumulated waste and broken-down products. These cells and tissues are surrounded by dialyzing membranes through which a constant endosmosis of nutrient material and an exosmosis of retrograde products are going on. An abundance of water is necessary at all ages, to keep these membranes in good working order, but especially is this true in infancy and childhood, when the assimilative and eliminative functions are so active. Often young infants cry from so-called colic, and are dosed with brandy, paregoric, or some such abominations, when they are suffering from thirst, and a few teaspoonfuls of cold water will relieve the difficulty, and they will fall into a peaceful sleep. All young children should have plenty of pure water at regular intervals.

The clothing should be made so as to give free movement to the limbs and permit a natural and unrestrained development of all the organs and functions of the body. The young child should have, at regular periods, an abundance of plain, unstimulating food, and plenty of exercise and spontaneous play in the fresh air, and should at an early age be trained to habits of regularity in attending to the functions of the body.

As childhood is the time of active development, and as sleep is Nature's great upbuilder and restorer, children should have an abundance of sleep during all these years, and especially while attending school. All stimulants and excitements, such as late hours, children's parties, and the many artificialties of our so-called advanced civilization, which tend to bring about a premature maturity, should be strictly avoided. During childhood, when their perceptive faculties, memory and imagination are active, they should be brought in close contact with mother Nature, from whom they will gain far more physical strength, mental power and wisdom than can be obtained from the formal methods and conventionalities of most of our schools. I desire here to enter a protest against the long hours, continuous mental strain, cramming methods, and forcing processes of most of our modern schools. Scarcely is the child out of the cradle before it is sent to a kindergarten school; here, if it is so fortunate as to have a teacher who understands and is thoroughly imbued with the true spirit of Froebel's teaching, it passes a happy time, and receives much benefit. The child's books are plants, flowers, trees, fruits, birds, insects, and the various objects, animate and inanimate, of the external world by which it is surrounded. The everlasting hills rising in majesty and grandeur, the soughing of the wind among the trees, the murmur of the brooks, the glorious sunsets, the autumn forest with all its gorgeous hues and kaleidoscopic changes, in short, the almost infinite variety of objects and the innumerable beauties of Nature can be made most impressive sermons by the true kindergarten teacher—sermons which will sink deep down into the soul of the child and leave an impression on its body, its mind and its character which the storms and vicissitudes of life will never obliterate. But, alas! such teachers as we have in mind are like angel's visits—rare, indeed— and come to us like a ray of hope from the great beyond.

In the majority of instances even the life of the kindergarten is smothered by the blighting curse of formalism, and instead of being a blessing it is made a curse, and through ignorance or disregard of the most rudimentary physiologic laws lays the foundation of physical defect or disease. But if this is true of the kindergarten, what shall be said of the average primary school? In the words of Dante, there should be inscribed over the portal: "He who enters here leaves hope behind," because from my observation and information about our schools, from the time the pupil enters the first primary grade until he completes the grammar school course, he is continually subjected to such a grind and cramming for examinations that he must indeed be made of stern stuff if he does not emerge from this course weakened both in body and mind. The object of all true education should be a well-rounded symmetric development of all the powers, physical, intellectual and moral, of the individual; but in the face of this truth, which is acknowledged by all educators worthy of the name, we see children from 6 to 15 years of age, during the time of intense developmental activity, subjected to a course of study which, in many instances, is entirely beyond their comprehension, and a source of constant irritation to their immature and unstable brains.

Especially to be deprecated is the everlasting number work and arithmetic drill, which appears to have become a mania with the larger part of the teachers in our schools to-day. From the time the unfortunate child enters the first primary, through the eight long years until he emerges from the grammar course, he is subjected to a continual grind in number work, problems and examinations; morning, noon and night they are a veritable "old man of the sea" to them, hanging like a pall over their hours of leisure, and, even invading their dreams, they have become not only a menace to the health and happiness of the children, but also a nuisance to their parents, who can not enjoy a quiet half hour because a puzzled child can not solve a long list of problems far beyond its comprehension, and appeals for help. But, after all, what results are attained from all this work, worry and grind? I believe I am justified in saying that they are nearly always inadequate, and often a dismal failure, and that any 11 or 12-year-old pupil who had never looked into a written arithmetic, but who had been carefully drilled in mental arithmetic, can do better work and obtain a clearer comprehension and more thorough grasp of the subject in three or four years than the struggling child obtains by its eight years of arduous and detestable toil.

Then, too, the system of examinations in vogue in so many schools is a veritable *bete noir* to the pupils, who are kept in a constant state of worry and irritation, and subjected to a continuous nervous strain. The work, instead of being inspired and vitalized by a love for truth, and a desire to penetrate and understand the secrets and laws of Nature, becomes a mere mechanical cram and filling-up process to pass the examinations. This sort of work, as every one knows, has not only little real educative value, but by leading to makeshifts and subterfuges of various kinds, as well as downright cheating, degrades the pupil. Healthy mental and physical growth and activity are conditioned on an enjoyment or appreciation of the work being done. A distasteful task, or one done under compulsion, fatigues the mind much sooner, and leaves a much more evanescent impression than one which arouses the pupil's enthusiasm and engrosses his whole attention.

When the teacher so directs the pupil as to call his physical and mental powers into play, spontaneously, the dry rot of formalism and routine vanishes as if by magic, from the school, and instead of the tired, disgusted look on so many young faces, produced by the mechanical leveling process, which by confining within restricted bounds, reduces all to the same plane of mediocricity, we see the flashing eye, the eager intent purpose, and the whole soul of the pupil aroused by a noble enthusiasm. Who will say that in true educative value, one hour of such work is not worth weeks, nay months, of spiritless cramming.

Nor are spontaneity and interest less important in physical than in mental work. Free, unrestrained, spontaneous play in the open air is of infinitely greater value in developing the body than any indoor formal exercise, although, properly directed, gymnastic exercises, if subordinated to outdoor sports, can be made valuable adjuncts.

So many pitfalls and dangers lie hidden in the pathway of the rapidly evolving child that in order to guide him wisely and safely through the intricate labyrinth, to avoid the Scylla of physical ills, on the one side, and the Charybdis of mental evils and abnormalities on the other, it is necessary that the physician should at least have a clear outline knowledge of his evolution, and know something of the physical and mental characteristics and potentialities impressed on him throughout the ages.

PROGNOSIS OF LARYNGEAL TUBERCULOSIS.*

BY ROBERT LEVY M.D.

DENVER, COLO.

In view of the many authentic cases of cures, both spontaneous and under treatment, which have of late years been reported, it is with some surprise that the vast majority of general practitioners as well as a fair number of laryngologists still look with but little hope on every case as soon as the verdict of laryngeal tuberculosis is given. The general statement "prognosis-grave" is sufficient to satisfy the conscience and condemn the patient. This view is certainly to be looked on as misleading to say the least, especially as it is generally given more prominence than the modifying and qualifying statements which usually follow. It is quite as much to be regretted, as so well put by Schech in Heymann's "Handbuch," that the present "beloved joy" over the results of modern treatment produces much harm both to our science and to the patient by promises which can not be fulfilled.

It is with the hope of presenting the subject in a conservative manner, with such deductions as shall be of practical value, that I offer the results of some years' observation of carefully recorded cases. One can not as yet say that all opportunity for differences as to the prognosis of this serious affection no longer exists, and for this reason radical changes are year by year noted in the views of all observers. The history of the curability of laryngeal tuberculosis is still being made, and one must not therefore expect to be too dogmatic; and still it must be conceded that certain well-defined conditions are positive indications for reliable prognostic inferences.

For these reasons the laryngologist becomes a valuable guide in early and accurate prognosis as he is in the diagnosis of this disease, and were he to examine every case of tuberculosis of the lungs or other organs his usefulness would doubtless be increased by the detection of tubercular infiltration or other lesion in the larynx which passes unnoticed until the patient is beyond hope.

The report and demonstration of spontaneous cures of tuberculous lesions in the larynx by men of undoubted veracity and authority can not be too strongly presented and reiterated—Kidd, Heryng, Rosenberg, Zendziak and others—for it was from this that hope first sprang and that the curability of this hitherto greatly deplored condition was established by the pioneers. Encouraged by nature's lessons in repair she was assisted by our scientific efforts, until cures under treatment began pouring in from all sides by scores of men, such as Krause, Heryng, Bergengrün, Thost, Newmann, Massei, Wolfenden, Symonds, Gougenheim, Gleitzmann, Murray, Krieg, Whistler and many more equally authentic reporters.

In spite of the enormous amount of optimistic literature on this subject one can not ignore two important criticisms, namely, the question of diagnosis and that of the proof of cure. It would be desirable could we in all cases produce such incontrovertible evidences as in Krause's and Heryng's cures, in which post-mortem microscopic investigation demonstrated to the satisfaction of Virchow and E. Fraenkel the complete absence of tubercular lesion. Even this evidence may be questioned by the hypercritical, for Schrötter, in commenting on

*Presented to the Section on Laryngology and Otology, at the Fiftieth Annual Meeting of the American Medical Associaton, held at Columbus, Ohio, June 6-9, 1899.

Heryng's case, says that greater time must yet elapse before we may accept such conclusion.

For all practical purposes it would seem that Delavan's statement is more than sufficient, when he proposes "to call that case cured in which all trace of active disease has disappeared from the larynx and all active symptoms referable to that organ have passed away, particularly where there is no recurrence of the local trouble during the remainder of the patient's life." I would go a step further and call a case cured in which all active indications of disease fail to recur after two, or in some instances after one year from their cessation. I do not deny the necessity of waiting, but why refuse a cure to those cases which become not recurrences, but new attacks? In other words, many a case may be considered cured which in later years, because of continued pulmonary disease either through local infection or the lymph or blood channels, develops another and new case of laryngeal involvement. The lesson we draw from this statement is that without other exciting causes such cases would *remain* free from laryngeal disease.

As to diagnosis, it is not necessary to await the appearance of typical ulcerations. Irregular spots of redness, characteristic anemia, typical infiltration and soft papillomatous excrescences are sufficient guide to the experienced. Catarrhal ulcers are rare, and where they occur in phthisic patients they should be looked on as suspicious, to say the least. Avellis has shown that tumors not typically tubercular may yet be so, and even though Schnitzler doubts the tubercular nature of an apparently typical ulcer, because of its readiness to heal, Beale shows how easily an evident catarrhal ulcer may become tubercular.

The presence of tubercle bacilli in the sputum will often clear up a doubtful case, but where they are absent or of doubtful origin, an examination of the scrapings from a suspicious lesion will almost invariably give positive results.

Having thus briefly considered such general topics as would seem essential to a clear judgment of the prognosis of laryngeal tuberculosis, what special questions may assist us in arriving at practical conclusions?

In studying my cases I am particularly impressed with the influence on the progress and termination of the cases by: 1, the nature of the lesion; 2, the position of the lesion; 3, the combination of lesions; 4, the pulmonary complication; 5, the coexistence of syphilis; and 6, the treatment.

The Nature of the Lesion.—Tubercular infiltration is frequently seen alone, but in the majority of cases only early in the disease. It is often associated with new formations of papillomatous appearance, and alone or in this combination continues indefinitely. It is not my purpose to prove, beyond question, a position by offering statistics; these can be perverted to suit any occasion; but one may obtain at least a glimpse of the truth by a study of numbers of cases.

My records cover several hundred cases, but many are incomplete as to result. I find, however, 144 complete accounts of cases, of which 84 were of the infiltrative and papillomatous variety, and of these 26 have gotten worse or died; only 8 of the 26, however, were materially influenced in their downward march by the laryngeal complication, making a percentage of 9 plus. The remainder were either cured or improved. Cases of the ulcerative variety numbered 60, and of these 37 got worse or died, of which 29 were hurried to an unfavorable ending by the laryngeal disease, making a percentage of 48 plus, the remainder being improved or cured at last reports. It is thus shown that a favorable view may be accorded the infiltrative and papillomatous variety over the ulcerative by 39 per cent.

The Position of the Lesion.—No portion of the larynx is exempt from tubercular attack, and it would indeed be tiresome and but slightly profitable to classify in minute detail and separately each site on which a lesion has been found. In a general and practical classification one may be content to divide the lesions into: 1, those which have not yet attacked the epiglottis and aryepiglottic folds; and 2, those in which the epiglottis or aryepiglottic folds or both have been also involved. My records show 103 cases of the former, of which 11 got worse or died, and 41 of the latter, of which 29 died. The relative percentage shows that of Class 1, 10 per cent. plus, and of Class 2, 70 per cent. plus succumbed, thus making the class in which the epiglottis or aryepiglottic folds were involved 60 per cent. more fatal. I am frank to admit that these figures may be subject to criticism, for so many elements must enter into an analysis of cases; still they present the relative gravity of various lesions in laryngeal tuberculosis on a more definite basis than has been heretofore attempted. In a general way many authors have shown results which are in accord with those above given. I refer principally to Krieg, Heryng, Bosworth, Wolfenden, Symonds, Gougenheim, Schech.

While therefore admitting the great gravity of cases in which the epiglottis and adjacent structures are involved, one must recall not a few cases in which even here a cure resulted. Cohen, Symonds, Castex, Heryng, Curtis, Newmann, Whistler, Gleitzmann, the author and others, have placed such cases on record. I have records of 12 such cases cured or improved. Of these, 4 were possibly mixed with syphilis, the remaining 8 being purely tubercular, of which 4 are improving rapidly and 4 are known to be cured.

The Combination of Lesions.—By this I refer to cases which are mixtures of two or more of the forms already outlined or the association with edema, acute tuberculosis or pharyngeal tuberculosis. When complicated by the last named, the prognosis is most grave.

The Pulmonary Complication.—Krause has shown that it is possible for laryngeal cures to result even while the lungs continued to fail, while Browne has shown that improving the larynx may bring about pulmonary improvement. Still the rapidity, extent, length of time, stage and nature of the lung disease must have a very close bearing on the course of the laryngeal complication. Thus also, as Heryng points out, age, constitution, surroundings, the number of bacilli and, according to Thost, whether the disease be hereditary or acquired, play a part in determining the denouement.

The Coexistence of Syphilis.—That syphilis may modify the course of laryngeal tuberculosis is well established. The question of diagnosis, however, becomes here a most important one, for doubtless many an atypical syphilitic lesion has been mistaken for a tuberculous one. The presence of tubercle bacilli in scrapings from such a lesion throws much light on the case. The weight of opinion seems to favor the mollifying influence of syphilis, but as Rice has said, "the prognosis will depend on which one of these two diseases is the more active," or, as Schech puts it, the prognosis becomes more unfavorable as the tuberculosis gets the upper hand. In four otherwise unfavorable cases which I saw cured, syphilis was a decidedly possible complication and greatly influenced the favorable termination.

Well-Selected and Skilful Treatment.—That properly

chosen surgical or medical treatment may greatly influence the prognosis of this disease must be acknowledged. The many remedies which have been followed by individual success and the many rules which have been laid down for surgical and other interference are evidence of rather chaotic conditions in the matter of indications for treatment. Above all should great care and consummate skill be exercised in the application of heroic measures. Many a case has been injured by unskilful or improperly selected treatment.

DISCUSSION.

DR. GEO. L. RICHARDS, Fall River, Mass.—At the Denver meeting I had the pleasure of reading a paper on the same subject, and when the paper was afterward published in the JOURNAL, some time in May of this year, I appended a footnote giving the condition of those still living on the 15th of May. One, at least, had no return of the trouble up to the present time. Two are noteworthy as illustrating a point to which Dr. Levy has referred, namely, that the laryngeal trouble may remain cured while the pulmonary condition is getting worse. One of my cases had no return of the laryngeal trouble up to the time of death from pulmonary affection. In another case the laryngeal trouble has been in abeyance for two years, although the patient is slowly succumbing to the pulmonary condition. For the local medicament I used 10 per cent. monochloroparaphenol applied either directly with a swab or with a spray, usually preceded by lactic acid. The results have been as satisfactory as with any treatment in laryngeal tuberculosis; that is, the cases get better but the tuberculosis progresses. I would like to recommend this treatment for the local lesion.

DR. S. E. SOLLY, Colorado Springs, Colo.—I much appreciate Dr. Levy's paper. His conclusions, as usual, are right. I have been gratified in Colorado in procuring comparatively good results in the treatment of laryngeal tuberculosis. The point Dr. Richards made, that many cases are cured even when the pulmonary tuberculosis progresses is true. While I have had a few patients in whom the epiglottis or the folds were affected yield to treatment, yet I agree with the essayist that they very rarely recover. I have three cases of recovery from this condition in my mind at the present time. They were, however, cases in which the laryngeal tuberculosis developed after they came to Colorado, as I saw them in the very beginning, and treatment arrested the progress of the laryngeal disease. These patients are all doing well, both as regards their local and general condition. In one I removed a considerable portion of the epiglottis and in the other two I curetted deeply and then rubbed in lactic acid. The affection of the epiglottis most often starts in the middle of the under surface, and active and early treatment at this point not infrequently prevents ulceration developing on the free edge. I have in a bad case removed almost the entire epiglottis, with relief of the local disease.

DR. H. W. LOEB, St. Louis, Mo.—I should like Dr. Levy to state to us whether or not he considers the climate of Colorado has anything to do with the rather better prognosis in his results than we get in this part of the world. I have had but one case apparently cured or at least doing well now, five years after the treatment. I do not think the treatment did any good at all. In that case the diagnosis was verified by three other laryngologists.

DR. WILLIAM DUFFIELD, Phoenix, Ari.—I do not want to make any comments or discuss this paper. It is one of the best discussions of this subject that has been either read or printed, to my mind, and my only regret is that every general practitioner could not have heard this paper, because of its great importance to the general practitioners throughout the country. My brief experience as a laryngologist in a western health resort only bears out what Dr. Levy has said. His classification is so excellent and his prognosis so nearly that of our experience that I can only commend his paper. I want to add the testimony of one who lives in that section and who has some experience, that tuberculosis of the larynx is no longer entirely hopeless, and that our prognosis should be very much better than it has been in the past. I hope the attention of practitioners in general will be called to this paper, because I believe it one of great importance.

DR. HOWARD S. STRAIGHT, Cleveland, Ohio—My experience of something like ten years is in line with that of Dr. Loeb. The statistics Dr. Levy gives are very much more hopeful than the results I have had in my cases. I have had one case that I have watched about nine years. The patient is a girl who had tubercular laryngitis with ulceration of the vocal cords and partial loss of the epiglottis two years before coming under my observation. When I saw her she had a lighting up of the process and I supposed she would live only a few months, but she is still living. It is the only case that I have had a chance to follow up all these years. I have seen a good many cases, and with us the disease is almost universally fatal. They almost all die and as a rule within a year.

DR. F. J. QUINLAN, New York City—This is a paper that should provoke much expressive thought from us, coming as it does from a man who is probably in position to see these cases more frequently than we do. As I tried to follow the Doctor, he didn't seem to me to dwell on those forms of laryngeal tuberculosis that are concealed, for instance, in the first stage, viz., that of hyperemia, followed by tumefaction, and then the stage of ulceration and breaking down. I do not know whether the Doctor considered ulcerative tuberculosis in his essay. It is almost impossible, except from the examination of the sputum, to tell any form of tuberculosis. The Doctor admitted, whether intentionally or otherwise, that medication affords a great deal of ease to this class; and I think relief given the patient in deglutition, improving the voice and, improving the general health, is of the greatest importance. For instance, when the epiglottis or part of the arytenoid is involved, much pain is given him in swallowing, and if relief of the pain of deglutition could be brought about, then nutrition and assimilation would certainly be improved. I have used, and very gratifyingly of late, europhen, which arrests and clears up many of those low grades of ulcerative tubercular laryngitis.

DR. ROBERT LEVY, Denver, Colo.—There remain very few words to say in closing. In the first place, it was not my intention to deal with the treatment of laryngeal tuberculosis All I said under that topic was that proper treatment plays an important part in the prognosis of the disease. Methods inappropriate to the case often undoubtedly hasten its serious outcome, while many cases with properly selected treatment improve. But I had no intention of dwelling on treatment. As to the results, shown by the report of cases, being influenced by the climate of Colorado I simply say that you can draw your own conclusions. Reports have been made from various parts of the country. Dr. Solly, in an essay some time ago, gave a recovery of 25 per cent. Recently another reporter in a resort in the Catskills reported some 40 per cent. of cures. But the point I wish to make especially in regard to prognosis is that the character of the lesions, the situation of the lesions, and the combination of lesions, play the most important part in determining the prognosis. That is the point I wish to particularly bring out. We are now in a position to say that the prognosis of laryngeal tuberculosis must be considered from various standpoints. This paper was presented in order that we might, on seeing a case, be guided in giving something like a reasonable assured prognosis.

RELATION OF UTERINE DISEASE TO SOME OF THE INSANITIES.

BY C. C. HERSMAN, M.D.

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PITTSBURG, PA.

There is no organ or portion of viscera which is not intimately connected with the brain through the sympathetic nervous system.

We know that cell metamorphosis is interfered with by excessive irritation; that cell nutrition is hindered thereby, and, as a result, the function of the cell lessened.

When we consider the function of brain cells, and especially of that portion where we expect mentality to be located, the importance of perfect physiologic conditions is manifest to insure perfect pyschologic action. We know that in the brain certain associations of cells called centers have control or inhibitory influence over many of the lower reflex functions when in perfect healthy action. Hence, if these lower reflex functions are badly disturbed or interfered with by disease or accident, may we not expect defects in those functions of the brain above men-

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

tioned, sufficient to cause a loss of self-control, and, in so far as they exist, constitute mental alienation? By this continued reflex irritation the energy or reserve force of the cells is so exhausted that continued mental effort is greatly weakened, if not wholly incapacitated. My object is to here show that the great advantage gained by relieving these uterine disturbances, accidents or diseases which cause the reflex irritation in the brain, is to allow whatever inhibitory power remained in these brain cell centers to become active and gradually restore them them to their normal condition.

I add this advisedly, for if these uterine disturbances are allowed to return from any cause which lowers the reserve nerve force below a certain standard, we have a return of the mental overthrow, and we should never fail to impress the patient and the family with the necessity of avoiding everything which in her case seems to determine the attack. Members of the profession have often noticed that even a normal menstruation has something to do with a woman's disposition, and that some women with naturally lovely dispositions are anything but angelic during pregnancy. Menstruation, pregnancy and some of the uterine diseases seem to have a psychic condition of their own, the main features of which in many persons, especially of the neurotic type, are a slight irritability or a tendency toward a lack of mental inhibition. In menstruation you will find these symptoms just before the commencement, and with some for a week or more after, which is also her period of highest conceptive power and keenest venal activity. Take a person suffering from chorea, neuralgia, epilepsy, in fact any of the nervous affections, and you often find the trouble very much exaggerated during this period. In some instances we find women suffering from chorea or insanity when pregnant, to be relieved only by abortion or delivery at term. Only a few years ago I had a case in which death seemed imminent, but after abortion, the immediate cause of which was unknown, the insanity disappeared and she made a rapid recovery. Not only that, but we meet patients who have a persistent desire to eat unnatural things at these periods.

We, as a profession, also know that the normal performance of the functions of the organs of gestation in many cases is essential to mental soundness. We know that a profound mental impression on most women will cause a cessation of the flow, and in the insane we do not expect a regular monthly menstruation during the stage of acute symptoms. One of our writers has said, in reference to the monthly flow: "The melancholiacs are more depressed, the maniacs more restless, the delusional more under the influence of the delusions; if the subject of hallucinations, they are more intense, the impulsive more uncontrollable, cases of stupor more stupid, and the demented may be more enfeebled or excited." This is a fact easily verified by spending some time in a lunatic asylum; although there are exceptions, it applies to many of the insane.

The climacteric is another time in life at which insanity is liable to develop, especially in maiden ladies. By some it is called "old maid's insanity," "ovarian insanity." We are told that the disease usually occurs in the unprepossessing, who have lived a severely virtuous life in thought, word and deed, and often a very religious life, on whom Nature, just before the change of life, takes revenge for too severe a repression of all manifestations of sex. This may take a turn similar to nymphomania, or it may be true nymphomania, and the patient usually thinks that some one is greatly enamored of her, mostly some one prominent in society or the community, very often a preacher.

The possible explanation of insanity occurring at this period is, that continence means atrophy, disuse means functional decay, and the influence of persistent continence on the individual, whether male, or female, is to dwarf, yea, in many respects to destroy the breadth and fulness of physical and intellectual individuality. It is a well-known fact that the "ovaries and testicles have at least three distinct actions; the first, generation; the second, their action through absorption on the central nervous system, which give to men and women their physical, moral and intellectual characteristics. The third is a special tonic action which reinforces in a special way the action of the spinal cord and brain, "the last of which is of importance to my subject. These are well-known functions which can not be disputed.

Referring again to pregnancy, few women pass through the period of gestation without there being some change mentally from the normal. However, scientific writing on the psychology of pregnancy is scarce, but without going into the discussion of this subject, we find the reasoning power, moral sense, the imagination, memory and some other natures are often different, and very different from the natural person as we have known her. And still, as a further argument of the intimate sympathetic connection of the brain and uterus, how many of us have seen in the lying-in chamber or during the menses, by a sudden mental impression, either joy, grief or fright, the flow, menstrual or lochial, suddenly stopped; if menstrual, not to return, or to do so after due course of suffering; if lochial, to return after several days, to be followed by a tardy recovery. Were every practitioner an alienist and every alienist a practitioner, many cases of insanity might be averted; but, unfortunately, the alienist seldom has the opportunity offered him to treat insanity in its incipiency, and the general practitioner is too apt to hesitate when he sees the mind coming unbalanced, and after some delay seeks the advice of the specialist, thinking the disease has entirely overreached his domain and that the alienist possesses some knowledge, all his own, which makes the cause plain to him. If we could get the general practitioner to understand more generally that insanity is often a symptom of trouble remote from the brain, and that he must look for the seat of the trouble, not always in the head, but in some organ, any organ, all organs, we should possibly have fewer chronic insane.

I can not refrain from mentioning in brief two cases from the St. Francis Hospital of Pittsburg, insane department. A Jewess, married, very excited, was in the Hospital for a few months. She also suffered from chronic endometritis, was curetted and went home in three weeks with no mental symptoms. Again, a Polish girl who had been in the Hospital for more than a year with no improvement mentally, on examination was found to be suffering from chronic endometritis. She went home cured in two weeks after curetting the uterus. They have both remained well, a period of about five years.

It is difficult to draw the line where general practice should cease and special practice should begin. The two should go more hand in hand. The psychologist has given us his theories and classifications, thereby complicating and preventing the advance in the study of diseases in which mental aberration is the symptom that otherwise would have been made had general practice and special practice not been so widely divorced. I do not wish to convey the idea that insanity as a symptom is always indicative of a diseased organ. It may be a faulty condition, a slight disturbance, a functional trouble

only, which, if corrected, might prevent any further anxiety. It would be well for every practitioner of medicine to read the very able article by Dr. Samuel Ayres of Pittsburg, on "Gastro-Intestinal and Hepatic Disorders, Especially, Chronic Gastro-Intestinal Catarrh in Relation to the Etiology of Some Cases of Insanity," and that by Dr. Alice Bennett of Norristown, Pa., on "Insanity a Symptom of Bright's Disease." In these articles we have ample argument to look for a cause in many cases outside the brain.

In lunatic asylums we find a wide field for the gynecologist, but many times very unsatisfactory subjects to treat. I am aware we usually look to the brain when searching for the cause of insanity, and many times, I fear, when we should look elsewhere. It is necessarily the immediate seat of disturbances, but the remote cause may be very foreign to that organ.

I am rejoiced to know that such men as my friend and teacher, Prof. George H. Rohé, M.D., Sykesville (Md.) Insane Asylum, now deceased; W. P. Manton, M.D., Detroit, Mich.; Joseph Price, Philadelphia, and others whose very striking articles I have had the pleasure of reading, bearing on the subject, have been giving their attention to this line of thought, but in more heroic measures than I have, as they have resorted to the knife, while I have nothing severer to report than the curette or local application. I feel that they have opened up a new field for the gynecologist, and established the beginning of a new era for the alienist.

In looking up statistics for Pennsylvania I find that for the year ending Sept. 30, 1891, there were admitted to hospitals, 788 insane women and girls; in 1892, 802; in 1894, 1146; in 1895, 931; in 1896, 806. Of that number there was 9.5 per cent. of the 1891 admissions with a history of uterine trouble given as the cause of insanity. Of these 788, we have the history of 480 only, 308 having no cause assigned for the insanity. In the percentages of the years from 1892 to 1896, inclusive, I have confined myself to the physical causes alone, which include that class of causes only which produce uterine disease or disturbance. These percentages are as follows: In 1892, 21.6 per cent.; in 1894, 29 per cent.; in 1895, 23.3 per cent.; in 1896, 18.3 per cent.; the percentages of all admissions running slightly higher than in 1891. The causes given are child-birth, climacteric, dysmenorrhea, menopause, onanism, menstrual derangement, pregnancy, abortion, puberty, puerperal causes, venery and uterine disease.

Had we the history of the remaining numbers of each year not given, and the same ratio prevailing, we would have our percentage increased to an alarming degree, to say the least.

With these percentages staring us in the face, should we not be more concerned about our patients who are suffering from uterine disease, and especially those of a neurotic type? Many times, if the uterine disturbances were relieved the insanity would be removed. I can not refrain from referring to another woman in the West Virginia Hospital for the Insane, who was suffering from intrauterine vegetations and dying a slow death from slight continuous hemorrhage therefrom. After dilatation and a thorough curetting, she made a complete recovery from the uterine disease and was discharged quite well mentally. Knowing, as many of us know, the association of uterine disease and mental disturbances, it is surprising that there has not been a closer study into the relations of the two, that we have not more literature on the subject, thereby giving an impetus to the investigation of mental symptoms and their causes in some remote organ, and to establish a relationship if possible.

No fact has been more clearly established by psychologic investigation and neurologic anatomy than that the human anatomy is wholly dominated by the sympathetic nervous system. The whole physical structure is subservient to its influence. It is a despotic force with compulsory requirements. There is no stasis, either active or passive, no modification of the activities, no irritation, however slight, but will manifest itself through the sympathetic nervous system. I have seen, as already stated, in the treatment of insanities the result of uterine disease, the local or surgical treatment of the trouble not only cure the uterine disease, but effectually cure the concomitant disease occurring in the brain, thus showing the mysterious (?) and unaccountable (?) connection between them. A woman becomes the victim of nymphomania, amenorrhea, dysmenorrhea or some one or more of the many forms of uterine disturbances; it may take on one of the amatory phenomena, especially of nymphomania, a religious turn, devotional enthusiasm of so violent a character as to necessitate removal to a lunatic asylum—and these are not fictitious cases—and all this because of local irritation.

Finally, we may have a uterine trouble, an irritation, transmitted through the hypogastric, spermatic and other ganglia and plexuses, from cell to ganglion, passing onward to the sacral, to the cord, the medulla oblongata and the cerebellar and cerebral ganglia, finally by coronata radiata fibers to the cortex of the brain, that most valuable distribution of nervous matter, the seat of mentality and intellectuality, ending in a complete overthrow of the noblest propensity of woman, driving her to a madhouse, there to drag out her existence within the walls of her life prison. Thus we have the beginning and end of a very sad picture.

TREATMENT OF CHRONIC CROUP.*

BY EDWIN ROSENTHAL, M.D.
PHILADELPHIA.

Many of us who practice intubation in the treatment of laryngeal diphtheria occasionally meet with a case that causes us much care and annoyance, by reason of the duration of the symptoms of stenosis. Since the advent of the diphtheria antitoxin our methods of treating intubation have changed. Where, before the use of this remedy, we permitted the tube to remain in the larynx at least a week before we thought of disturbing or removing it, we have found that, in the majority of cases, the tube can be removed, or removes itself by expectoration, before the peroid of five days, or 120 hours. If we are called early enough, that is, before intubation becomes a necessity, our cases—in the majority of instances—recover promptly on the third day, and at the most the symptom of stenosis disappears before the fifth day. Still, we meet cases that are not bad enough to require the presence of a tube, yet require treatment, by reason of that symptom-stenosis remaining or appearing at certain intervals. I have noted this quite frequently, and more remarkable, since the antitoxic action of the serum had removed all visual traces of the disease and the tube removed—if the case required it—and the case pronounced cured, the symptom-stenosis would return in a week or ten days, and would require a reintubation and a further treatment.

The question in our minds is the cause. I wish to ex-

*Presented to the Section on Laryngology and Otology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

clude any injury to the larynx by reason of the intubation, or by the continued presence of the tube in the larynx, as these cases are in the majority of instances a mechanical injury. And the cases I speak of are found frequently where intubation was not performed, and another cause than this must be looked for. As an instance, I will briefly describe a case:

William O., aged 3 years, of Swedish parentage, was taken ill with clinical evidence of diphtheria on Jan. 6, 1899. Bacteriologic test conclusively proved the presence of the K-L bacilli, also the streptococcus. An injection of 2000 units of the diphtheria antitoxin was administered, with the result of a disappearance of all visual traces of the disease in the pharynx. On January 14, the patient had a croupy cough, which was treated with an expectorant mixture, and three days thereafter symptoms of stenosis became marked, but not to such an extent as to necessitate intubation; at this time 2000 units of diphtheria antitoxin were again injected, with the result of somewhat relieving the stenosis. The lymphatic glands at the angle of the jaw were somewhat enlarged. Medical treatment was continued and the symptoms of stenosis relieved, but they reappeared, and February 10 were as bad as if no treatment had ever been given. Bacteriologic examination—five weeks since the first—showed an absence of the K-L bacilli, but still the presence of the streptococci. At this date, 10 c.c. of the antistreptococcic serum were injected, with the result of a disappearance of all symptoms of stenosis on the third day thereafter, and a perfect cure.

The presence of the streptococcus pyogenes as a complication in diphtheria is very well known. Its absence would prove the exception; but that the symptoms of chronicity in this affection should be ascribed to it, I think is something new. The strepto-infection may alone prove sufficient to produce the disease known as croup, as may be verified by bacteriologic test, and the knowledge thereof will be a sufficient guide to the treatment.

The cause of "chronic croup" may be otherwise than this. I have seen the too energetic use of hydrogen peroxid produce croup secondarily to other varieties of diphtheria, and in cases intubated, I believe, the constant use of the peroxid may be nothing but injurious. Therefore, in treatment, and since the advent of the antitoxin, I have used the peroxid simply as a lubricant, for by its use I have been enabled to more readily practice intubation. Its further use I have limited, and only diluted and with an atomizer, to those instances where the tube became clogged with inspissated mucus or other secretions from the throat. Using this remedy so carefully, I can not charge to it the cause of the constant intubation, an intubation that may last from five to eight weeks, or in cases where the tube was removed and the case pronounced cured, the necessity of intubation after the lapse of seven or ten days. I have elsewhere reported (*Phila. Med. Jour.*) a case of chronic croup wherein intubation was practiced, the tube removed, and reintubation on the eighth day thereafter, antitoxin meanwhile being used; and another case intubated, the tube removed by expectoration on the third day, where the symptoms of stenosis recurred every week for three weeks, and in which over 20,000 units of diphtheria antitoxin were used until a final recovery. The treatment of these cases was strictly antitoxic, but when I saw there was no response, and that some other factor was at work, producing the stenosis, I investigated, both clinically and bacteriologically, with the result that I found the main and certain cause of chronic croup was, in the complicating streptococcic bacteria, and by its presence so guided my treatment that my results have been most gratifying.

The treatment is as follows: When I am called to a case of croup, whether it requires intubation or not, I immediately use the antitoxin. I then make the bacteriologic test. If I find the presence of the streptococci I immediately make a further injection of the antistreptococcic serum, and continue with the antitoxin, as the case may require. If, however, as I have seen sometimes, there is a negative result as regards diphtheria, and a positive result as regards the streptococci, I drop the antitoxin and continue the treatment only with the antistreptococcic serum.

The method of its use is precisely similar to the antitoxin, with this exception. Where in the antitoxin treatment a smaller dose is begun, and a gradual increasing dose the rule, with the serum a large initial dose is the beginning and the same or a smaller dose follows. The time to give the injection is also different. In the antitoxin, any time is of value; with the serum, the early morning or when the temperature begins to rise. The parts chosen are the loins or side of the chest. The parts are cleansed with alcohol soaked on corrosive cotton or gauze, and after injection the aperture is closed with iodoform collodion. The commencing dose is 10 c.c., or even a larger quantity, and this is repeated on the same day or the day following, and is continued until its influence is shown by a decline in the temperature and pulse-rate, and an amelioration of all symptoms. The duration of the treatment is the same as with the antitoxin, and on the third day we may note evidence of a cure. The serum can be used to any quantity, and is as free from danger as is the antitoxin, the same sequelæ as noted with the antitoxin, as eruption, albuminuria and the like, are found here, and in all the manifestations the results are equal. In all cases where the bacteriologic examination shows the specific germ, the serum should be used, and in those cases of chronic croup, or where the diphtheria bacilli are absent, it is always in order to use this serum.

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DISCUSSION.

THE CHAIR—The Chair would like to ask the Doctor the length of time required to find the streptococcus infection.

DR. EDWIN ROSENTHAL, Philadelphia—Twenty-four hours.

THE CHAIR—And in the meantime you use the antitoxin?

DR. ROSENTHAL—To be sure; it is diphtheria. But if I find only streptococci, then I use the antistreptococcus serum.

THE CHAIR—I notice the diphtheria antitoxin has been used over and over again, but ordinarily it is the Doctor's experience, I presume, that the antitoxin to be of value primarily should be used within a very short time.

DR. ROSENTHAL—In a very short time, yes.

THE CHAIR—I mention that because in going over the literature I found one case of death after the use of antitoxin reported and it was rather interesting to say the least. The patient had had diphtheria for some time without the parents allowing antitoxin to be used. On the fifth day the physician gave an injection of nitroglycerin and antitoxin at the same time, and it was claimed that death was due to antitoxin. Of course we know that is not true.

DR. GEO. L. RICHARDS, Fall River, Mass.—I would like to know what the essayist means by the word "croup."

DR. ROSENTHAL—Any stenosis of the larynx due to diphtheria. When I find, as I do sometimes, that it is not due to the Klebs-Loeffler bacillus but to streptococci, it is still croup, but of course not true diphtheria.

THE CHAIR—In other words, you use "croup" to mean an inflammatory process causing dyspnea?

DR. ROSENTHAL—Yes; there are cases of croup not due to the diphtheria bacillus.

QUESTION—I would like to ask Dr. Rosenthal if he has in any case of diphtheria been unable to get the bacilli?

DR. ROSENTHAL—Yes.

WHAT ARE ANTITOXINS?*

BY R. G. ECCLES, M.D. PH.G.

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In a lecture delivered by Dr. T. Clifford Allbutt, regius professor of physics in Cambridge University, England, before the Johns Hopkins University in October, 1898, occur these words[1]: "The study of origins, then, is not only the new method of modern criticism, of modern history, of modern anthropology, of our reading of the evolution of the universe itself from elements which even themselves are falling under the same analytic inquiry, but the study of origins is leading to a revolution in our conceptions of therapeutics, as all of these other studies; a revolution which as yet we have not fully understood."

Never were truer or more profound words uttered than these. The revolution to which Prof. Allbutt refers is one so momentous that but few have scanned the horizon of modern therapeutics closely enough to duly appreciate its far-reaching consequences and importance. That this fact be made clear to those present at this Section meeting, and to as many members of the AMERICAN MEDICAL ASSOCIATION as do me the honor of reading this essay when it appears in the JOURNAL, permit me to ask how much and what does the name "Antitoxin" stand for when seen in print by the average medical man? To some, perhaps to most, progressive physicians, it means a new kind of remedy that may or may not be better than the old and well-tried ones of the past. How many, do you suppose, can see more than this it is as related to the destiny of our race? To the skeptic it is but the shibboleth of a new therapeutic fad. He doubts its value, and quietly to himself mutters, "what fools these mortals be." To the hosts of the sectarian pathies and their antivivisection allies it is nothing more than a filthy and diabolic lying invention of the vivisector, concocted as a piece of spurious evidence to prop up his wicked designs against dumb brutes.

How large a proportion of mankind see any more than one or the other of these claims in it? Have you watched the steps by which we have come to believe that such things as antitoxins really exist? Have you followed the logic of the men who have claimed to discover them? Have you seen how, step by step, the belief in their existence came to these men? If you have not, then you are not prepared to fully appreciate but the smallest fraction of what their discovery means. The antitoxins themselves are of far less importance to the race than are the solutions of the problems that cluster around them. They are but stepping-stones leading back into the mystic origins to which Prof. Allbutt refers. To fully and correctly understand what they are and how they are produced is to be able to solve some of the deepest riddles of life, health and happiness. They are leading us toward a true science of therapeutics and a true conception of how we have accidentally in the past cured diseases, and how we shall in the future prevent death "by the subtle strategy which consists in knowing all the moves of the game," as Prof. Allbutt put it. What little we have discovered concerning the antitoxins has come to us from a pursuit of the same methods of thought, the same style of research, the same processes of verification, and through the same class of minds as gave us the whole fabric of modern civilization. They have come to us as a part of the grand mental movement that built up the doctrines of the conservation of energy, the unity of natural phenomena and the universality of evolution. Have you noticed the methods of the men who are at work on the subject? Have you seen how they turn the light of counter-experiment and counter-criticism on each other in scorching concentration? Have you noticed that every question is put to Nature for final reply, and every answer verified or condemned by a competent peer? Have you observed how every mistake in logic is pounced on by a whole army of coworkers, and every mistake in experiment is mercilessly gibbeted in the same manner? Every idea and every fact must run the gauntlet and survive or perish in the struggle. The system only needs to be understood to be respected. When serums, toxins and antitoxins reached the general profession they had already been tried and found worthy of consideration by experts. They were given to us for further trial with human beings, where we have a right to experiment, but they may not. Whatever our verdict may be concerning them, it can not alter theirs, and will only prove that we had new and altered conditions to deal with, if it is adverse. To decry them without trial, or with unfair or imperfect trial, is dishonest, sinful, and unjust to the whole of animated nature, now and through all future time. We, as medical men, owe it as a sacred duty to give them a fair trial. Whether we do or not, however, workers in this field of pathology and physiology will go on making their discoveries along the same line of investigation. The laws of their action will be found, their chemical composition discovered, and their bearings on the greater questions of life as a totality worked out.

What are some of the questions now before them in which we as physicians are interested? It is only necessary to name them for all to see their importance. Here are a few. How come we to gain tolerance of poisons? What is the nature of immunity? How do neurotic poisons poison? How are toxins produced? How are they related to antitoxins? How do they act on each other? Is the action chemical or vital? To what class, or classes, of organic bodies do they belong? Is either, or are both, enzymes, albumins, globulins, or are they even proteids?

As a sample of the way the work is being prosecuted in the endeavor to get replies from Nature to these and kindred questions, let us take the late experiments of Besredka with orpiment or yellow sulphid of arsenic[2]. He found that injections of this almost insoluble substance, if very finely powdered, killed quicker than when injected in a suspension composed of coarser particles. When a membranous sac containing a quantity of the orpiment is placed in the abdominal cavity of a guinea-pig it will die almost as quickly as when the same quantity is injected directly into the same place. In the one instance the arsenic sulphid had to dialyze through the membrane, a thing it could only do by being dissolved; in the other it was brought into direct contact with the tissues. As this pigment is among the most insoluble of known poisons, it is here made manifest that it does not poison by mere contact. It evidently kills by chemical means. It can be stopped from killing by a proper chemical antidote. Besredka further found that if the quantity of orpiment injected is not too large the leucocytes take up the yellow particles into their structure, and for as long as ten days can be seen carrying them

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

around. Constant examination shows that the poisonous material is being slowly dissolved and a less poisonous substance produced that can be eliminated by the kidneys. That the leucocytes take up and dispose of many other poisons than orpiment in this way has been shown by Metchnikoff and Kobert[3]. The salts of silver, mercury and iron have been found to be carried throughout the system in this same manner. This work is done by the same leucocytes as are known to englobe and destroy microbes. It is evident that they have the power of secreting something that can unite with the poisons which they take up. What this something is happens to be one of the issues of the hour. That the leucocytes are not the only producers of this something that antagonizes poisons was shown by Widal and Nobecourt with strychnin and morphin[4]. They injected these hypodermically into animals with a small amount of fresh, sterile, brain substance, and found that the animals would live after double or treble the dose that would kill them without the brain substance. It appears as if the brain substance contained something that neutralized the poisons. Thoniot and G. Brouardel also found that when nerve-substance was used the results were the same. They kept their animals alive by injecting nerve substance in an emulsion before injecting the fatal dose of strychnin[5].

In 1896 Van Ermengen discovered an anaerobic bacillus in ham which had caused some serious cases of illness at Elzelles, Belgium. He produced the same train of symptoms with sterilized cultures of his bacillus[6]. Kempner and Pollock have isolated the poisonous toxin of cultures of Van Ermengen's bacillus and studied its effects on the cells of the bodies of animals. Injections of this toxin were found to cause degeneration of the cells of the spinal cord. A finely granular disintegration or "partial pulverization" of the corpuscular elements occurs. The physical changes revealed by the microscope correspond with the symptoms observed both in time and volume. They immunized animals to this toxin, and securing a serum from the immune animals, studied the same degenerative changes under its administration. If the antitoxic serum was injected soon after the toxin, the degeneration was but slight. When the antitoxin was mixed with the toxin before injection no degeneration occurred[7]. What Thoniot and Brouardel found true regarding the action of nerve tissue injections with poisonous doses of strychnin, Wasserman found held good for nerve tissue and the virus of tetanus[8]. A. Marie found that what was shown by Widal and Nobecourt to be true regarding the action of brain substance on strychnin and morphin was equally true with brain substance and tetanus toxin. He declares that he found it necessary to have a previous direct contact of the toxin and the brain tissue to have it act[9].

Metchnikoff has probably studied the subject of antitoxic action more than any other single individual. It was forced on him because it was at first supposed to be antagonistic to his belief regarding phagocytosis. He finds that while the brain tissue of the guinea-pig protects mice as well as guinea-pigs from the toxin of tetanus, neither the brain nor the spinal cord of tortoises or fowls has any protective effect on tetanus injected into guinea-pigs or mice. He believes that his many experiments have established it as a general principle that the more susceptible an animal is to tetanus the more efficacious its nerve substance or its brain substance is to tetanus. To this rule there are exceptions, and among them is the frog. Its brain seems to have no antitoxic power, although it is quite susceptible to the poison. In a former communication he showed that low cryptogams, like bacteria and fungi, destroy toxins but do not produce from them antitoxins, that invertebrates can not produce the antitoxin of tetanus in amounts that are appreciable, that only in animals as high as and higher than the crocodile are antitoxins produced; that in fowls the antitoxic power resides in the blood, and not in the nerve tissue, and that phagocytic power is older than antitoxic in the life history of our planet[10]. He thinks that mixtures of brain substance and nerve substance with poisons do not destroy them by any kind of chemical union, but that such mixtures produce an inflamed condition of the tissues, when and where injected, that attracts leucocytes and encourages phagocytosis. Their activity is the agent of destruction, and not the nerve substance. W. W. Stephens and W. Meyers have found in their experimenting with serums that the same quantity of serum always neutralizes the same amount of toxin, whether in the test-tube or in the body of the animal. They hold that this strongly indicates an adhesion to the chemical law of definite proportions, and, therefore, to chemical and not vital action[11]. Cantacuzene comes to the support of Metschnikoff, and shows that anything that suspends phagocytic activity in the presence of a powerful toxin causes the animal to die. This he holds indicates vital activity and not chemical[12].

Ehrlich finds that toxins and antitoxins affect each other more promptly in concentrated than in weak solution, in hot than cold solutions, and, with Stephens and Meyers, that they bear quantitative relations to each other. He claims that in the case of ricin he has proof of union in definite proportions[13]. He advances the theory that antitoxins are the tissue elements with which the toxins combine in the body to poison it. The irritation of partial poisoning causes the system to produce an increased amount of such tissue substance, this enters the circulation and acts as a means of neutralization before the toxin can get at the tissues for which it has an affinity. He thinks that there could be no poisoning of the cells if they did not contain elements having an affinity for the poison, and when the poison is fixed on such elements its power for further harm is gone. Just as a poisonous alkali unites with a poisonous acid to form a non-poisonous salt, so do the poisonous toxins unite with the tissue elements to form non-poisonous products. But as the tissue has thus been robbed of its necessary elements by the poison, a demand is made on the system to produce a surplus of such material, and this surplus constitutes the antitoxins. This ingenious theory has a number of able supporters in Europe. A number of the experiments which are here referred to seem to give support to it.

R. Pfeiffer and Marx accept this theory as a partial explanation of the phenomena of acquired immunity but they do not believe it can explain the presence in the body of substances having bactericidal power. They find that the spleen shows this bactericidal power. They the blood, and that the spleen, bone-marrow, lymph-glands, and possibly lungs, contain larger amounts of it than the blood. Here they hold that they have evidence that the leucocytes are neither the only nor the most important agents in the destruction of disease germs and disease poisons[14]. A. Wasserman thinks that the toxins and some of the organs react with each other to produce by a chemical union new bodies having bactericidal power[15]. The fatal objection to this theory is that it violates the law of parsimony by introducing new substances that we know nothing about, with properties that are unusual. Such lawless theories are the kind that

bring all theorizing into disrepute among men not accustomed to scientific methods of thought.

Three legitimate theories now hold the field, and as they are each guiding distinct sets of exceedingly able men in their work as experimenters, it is pretty certain that the question will soon be settled by the consensus of the competent. It is not at all unlikely that all three have elements of truth within them, and that no one of them is entirely able to explain all the facts. The chief weakness of Ehrlich's theory is its inability to explain the fact pointed out by Metschnikoff, that frogs are very susceptible to tetanus, and yet their brain substance does not act as an antitoxin. It likewise fails to embrace a large number of facts that one might naturally expect it to. This last objection is equally powerful against the phagocyte theory, when pressed forward as a complete explanation of the phenomena of immunity. The experiments of Pfeiffer and Marx, already referred to, are as damaging to the phagocyte theory as to that of Ehrlich, in that they positively limit the sphere of action of each. If the spleen, bone-marrow, lymph-glands and lungs have greater bactericidal power than the blood, this throws the phagocytes into an inferior position as microbe killers. There may be a number of ways in which such destruction occurs and by which immunity can be maintained. E. de Cyon, of the Physiologic Institute of Berne, Switzerland, has shown that iodothyrin from the thyroid gland, instantly destroys the toxic effects of atropin and nicotin[16]. If it also destroys the toxins it would be a very useful ally to the phagocytes, as well as the bacteria-destroying organs in their work. Salkowski[17], Brieger[18], and Ehrlich[19], have shown that sulphuretted hydrogen and some antiseptics can destroy tetanus toxin[20].

The theory which seems at present to permit of the generalization of the largest number of facts is the one that assumes that the antitoxic and bactericidal power of serum is lodged in substances that are of the nature of enzymes. The fact that they have been precipitated by Brieger and Boer by numerous agents in a way that pepsin, trypsin and other enzymes are thrown out of solution, indicates a possibility of their being enzymes[21]. For over a year Emmerich and Loew have been at work in Munich studying how enzymes are related to immunity[22]. Nencki and Pfeiffer made the suggestion of some sort of relationship between them in a way that led Emmerich and Loew to take up such work. Prof. T. Lauder Brunton, in his address at the International Medical Congress at Moscow, said: "Perhaps the hypothesis I mentioned eight years ago to my pupil and friend, Mr. Hankin, that the germicidal power of organisms is proportioned to their power to produce enzymes, may not be altogether unfounded, and possibly we may discover also that immunity, natural or acquired, is nothing more than an extension to the cells of the tissues generally of a power which is constantly exercised during digestion by those of the intestine and liver[23]. It appears then that the credit of first enunciating the theory belongs to Brunton. He, however, acknowledges his indebtedness to Dr. Johan Baptista van Helmont, a celebrated iatrochemist and disciple of Paracelsus, of the early part of the seventeenth century. Emmerich and Loew claim to have found that a number of different kinds of bacteria produce enzymes fatal to themselves and other germs. When combined with animal protein the enzyme is transformed into an immunizing product. Both substances have been isolated in tangible form so that it is a fully substantiated fact. DeSchweinitz has also isolated an enzyme from hog cholera germs, that immunizes guinea-pigs. Kondratieff declares that such evidence as he has been able to collect experimentally and otherwise compels him to believe that the antitoxins are related to the enzymes[24].

Enzymes are substances that have the power of causing other organic substances to alter their chemical composition by their presence while they themselves remain unchanged. Like parsons who marry two people, while the act of marrying them does not alter their own state in the slightest, these enzymes cause chemical unions to occur while they retain their condition of singleness. Those we know best, such as pepsin, ptyalin, trypsin and invertin, all force water into the chemical composition of various food stuffs, and enable them to dialyze through the walls of the stomach or intestines. They probably split all the substances they act on into smaller molecules[25]. There are other ferments that instead of aiding solution and dialysis hinder the same by coagulating or fixing substances. It is evident that all living forms, depending as they do on foods for existence, must have the power of dissolving, coagulating, and fixing such foods as an essential condition of life. As all such changes, so far as we have ever been able to discover, are brought about by enzymes, we have no logical right to assume that any other form of agency is at this kind of work until one is found. Step by step the so-called vital force has been driven by the enzymes out of this department of life. They have been found in every form of life from the bacteria and molds up to monkeys and men. As the processes of life are unthinkable without the accomplishment of their kind of work, and as they only are known to do such work, we can not avoid the conclusion that they must have existed as long as life has existed on the planet. They have ever coexisted with protoplasm, and must have been subject to its experience. As the ameba has gone upward in development toward the brain cell, every change must have brought a corresponding change in the enzymes that made its food soluble within its structure, and that fixed that food as solid tissue again. The enzyme is the doorkeeper of the cell. It is also, in its opposite form as a coagulant, the host within the cell. The first kind aids the substance in getting in, or if in and converted into waste makes it soluble so that it can get out. The second kind has a function that is just the reverse. It can keep out what is not wanted in or keep in what is not wanted out by rendering it insoluble.

Erlich has lately discussed this subject in connection with the administration of drugs[26]. He uses Witt's hypothesis of "stiff solutions" to explain the processes of staining tissues and of the passage of drugs through the cell. Every chemist who has worked in commercial organic chemistry knows how by the aid of acid and alkaline radicals he can make alkaloids and the like miscible or immiscible as he chooses in different solvents. In a similar way the enzymes may render various substances soluble or insoluble in the substance of the cell. By adding the sulphonic acid radical to aniline it is at once rendered unable to stain tissues and to poison them. Its inability to enter the tissue cells in the new form renders it unable to poison such cells. If it could get in to stain them it could get in to poison them. Being excluded it can do neither. By acting on toxins and other organic poisons with the special enzymes of the different kinds of tissues so as to alter their structures and make them unable to penetrate such tissues, they would at once be rendered harmless. Not a single new enzyme needs to be formed. No violence has to be done to Nature to make such a

hypothesis true. The whole material is now and always has been ready formed in the body to meet every emergency. All that is needed is an alteration in the proportions of the fixing and of the solving enzymes that constantly are at work in behalf of the special tissue to which the poison has an affinity. Natural selection must during all past time have been picking out to live, such animals as were able under the irritation of selective poisons to increase their stock of the fixing enzyme for that tissue and killing off every animal that could not make such an adjustment. Organic poisons and foods merge into each other in their chemical structures. The processes of digesting the one are not greatly different from those of digesting the other. To split up a poison and make it immiscible in the cell matter can not be much harder than to do the same thing for a food. It may only require an increase in force. Increased volume of output of one kind of enzyme and diminished output of the other and opposite kind could easily come from a change of demand, if this function follows the laws of all other known bodily functions. According to this hypothesis, then, immunity is due to an increase in the production of the fixing enzyme of that tissue which happens to be the special point of attack of the poison, this increase being due to the irritation of the tissue elements that the poison seeks to damage. As food turned into the stomach brings hydrochloric acid and pepsin, so poison turned into a cell brings its digesting enzymes in continuously increasing proportions as the irritation persists. After the cell has been irritated for a considerable time, it gets into a habit of producing an excess, thus establishing continuous immunity. As an overproduction of gastric juice will cause intense hunger, so an overproduction of other enzymes would be expected to produce their form of hunger, i. e., a desire for the poison that caused them to be produced in excess. We find that this is actually the case. The morphin fiend has morphin hunger, and the tobacco user has nicotin hunger. The enzymes that keep these poisons from reaching the tissues for which they have a special affinity, in doses that are dangerous, when not having the poisons to act upon may produce this special form of poison hunger.

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CONDENSATION AND PRESERVATION OF MILK BY REFRIGERATION.*

BY HENRY O. MARCY, M.D.

BOSTON.

In an article contributed to the AMERICAN MEDICAL ASSOCIATION last year[1], entitled "The Milk-Supply of Cities; Can It Be Improved?" I described somewhat at length a process devised by Mr. B. F. McIntyre of New York by which 80 per cent. of the water is abstracted from milk by freezing it, when in moderate agitation. The water, as ice, is taken from the milk in comparatively stainless crystals, almost without loss of solid product. It has been shown that the expense of condensation is very much less than by evaporation in vauco, and that the resultant product is of much greater value. A considerable series of experiments was undertaken during the summer, under the supervision of Prof. W. T. Sedgewick of the Institute of Technology, in order to ascertain the effect of refrigeration on the bacteria ever present in milk.

It was found, although the resultant was not perfectly sterile, that the bactetria were in large measure destroyed, and that the concentrate put up in glass jars, such as are commonly used in the distribution of milk, has a keeping quality of weeks rather than days. Encouraged by these results, Mr. Edward Burnett of Boston, well known for his practical studies in furnishing a better milk-supply, has established a plant[1] of sufficient capacity to demonstrate the commercial advantages of the process. It is believed that the process offers a practical solution of the difficult and expensive problem of milk distribution in cities; that the family supply will be furnished in a concentrate one-fifth the bulk of ordinary milk, and that distribution of it from house to house made once a week will be ample for practical purposes. By this process the fat globules are uninjured, and, as a result the cream is unimpaired for table use. Pathologic bacteria are destroyed by the process, and the milk-supply will be rendered safe for use.

The economic advantages are obvious. In the first place the milk will be furnished the consumer at a material reduction in cost, and the waste in its daily use will be very greatly lessened. A far more satisfactory product in every respect will be furnished, and with a little care the pantry will be in constant supply. Mr. McIntyre is by no means satisfied with furnishing a product which contains even so little as 7 per cent. of water, and he looks forward to the practical demonstration of furnishing milk in a solid form, with keeping qualities equal to that of butter or cheese. I have in my possession a sample of solid milk prepared by him, by this process, now some months old. I make this brief report of progress, since the milk-supply of the country is of the first importance to every individual, and we indulge the hope that the work thus begun will prove so satisfactory that it will revolutionize the distribution of the milk-supply of the world.

ACCORDING to the statements made by members of the crew of the *Sequoia*, which recently arrived at San Francisco, a large number of persons on the Clipperton Islands are afflicted with scurvy and already five deaths have been reported. It is said that this was the first vessel which had visited the port for a period of four months.

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*Presented to the Section on Physiology and Dietetics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

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Cold Process Co. of Contocook, N. H.

NON-MALIGNANT STRICTURES OF RECTUM.

THEIR SURGICAL TREATMENT.

BY JOSEPH B. BACON.

CHICAGO.

It is not the purpose of this paper to enter into the etiology or pathology of strictures, but simply to compare the different operative procedures of the past and show why the methods failed to give permanent results, and to again describe two methods of operating for rectal strictures, devised by me and published some years ago. The time is now sufficiently long since the cases were operated on to determine whether the results are permanent or not.

Some years ago, when I began teaching diseases of the rectum in the Post-Graduate Medical School, I had a large number of stricture cases sent to me. Among these cases were strictures located at all parts of the rectum, from the upper part of the anal canal to the upper rectum; some were circular bands of scar tissue, others tubular masses of cicatricial tissue. None of them were called rectal strictures unless the scar tissue involved all the layers of the rectal walls, and in the case of many of them, located at the point where the levator ani muscles encircle and embrace the rectum, the scar tissue extended far beyond the rectal walls. I was at a loss to know what to do with some of these cases where they gave a history of having undergone one or more surgical operations by prominent surgeons, with but temporary relief. Most of them gave a history of having used rectal bougies persistently for months, or years. At first the bougies had been used by the surgeon; finally the patient was instructed how to use the instrument. Some of them had worn a rectal bougie every night while in bed for months, but only got temporary relief of their constipation, but not even temporary relief from tenesmus and mucopurulent bloody discharges resulting from the ulceration at and above the seat of stricture. Gradual dilatation by bougies is a very old method, dating back as far as we have a history of surgery; but there is no authenticated record of its ever having been a means of cure in a true cicatricial stricture, while it has a record of producing an enormous death-rate from perforating the bowel or increasing the ulcerations and prolonging the septic absorption until the patient succumbs to amyloid visceral changes. We have every reason to believe that if the unpublished cases of accidents from rectal bougies were published, the results would be so appalling that the bougie treatment would be justly banished for all time, and its use classed as malpractice. The reason gradual dilatation fails to permanently relieve is that while there is for a time absorption of the scar tissue at the surface contact of the bougie or the inner surface of the ring, at the same time the peripheral surface of the scar tissue is excessively irritated and if the peripheral irritation and divulsion is long continued the contiguous fibrous tissue becomes hypertrophied, later to contract, and thus new scar tissue is added from time to time from the periphery.

Divulsion or forced dilatation of rectal strictures, with or without anesthesia, although a common practice of years gone by, produced such an alarming death-rate with no permanent authenticated results that it seems unnecessary to speak of the method at this age of common-sense and advanced surgical pathology. Yet several of my cases gave a history of having been treated by this method and suffered for weeks with pelvic cellulitis and sepsis; others suffered for months with pelvic or general peritonitis, and their history gave evidence that they had very narrow escapes from death, while none of them was permanently relieved from the constriction. Any cylinder or ring that is overdilated always ruptures first at the periphery; thus forced divulsion tears the periphery first, then the intervening tissue admits pathologic germs, which are always present in the diseased rectum, direct into the perirectal connective tissue, or into the peritoneal cavity, if stricture is in upper or middle part of rectum. This method of treatment is never justifiable under any circumstances, except when the stricture is confined to a circular scar of the mucous membrane. In these cases, if the ring of cicatricial tissue is broken, a bridge of mucous tissue will sometimes form between the severed ends and thus prevent the re-formation of a stricture.

Proctotomy for the relief of stricture has been practiced by surgeons since very remote times, probably dating almost as far back as the use of the bougie. It has been described and classified under the terms of internal and complete proctotomy. Internal proctotomy consisted in making one or more incisions from within the rectum through the stricture. These incisions give but temporary relief, and the absurdity of making a wound in a septic field, with no chance for providing free drainage, has been abundantly illustrated by the enormous death-rate even in the reported cases. Except as a rare procedure for extreme emergency, where otherwise death from obstruction is imminent, this operation should be relegated to the archives of ancient history to amuse the relic hunter of prehistoric jokes. In complete proctotomy the incision made through the stricture and all the tissues including the anal canal, the sphincter muscles, and everything back to the sacrum and coccyx, giving a free drainage, and the relief from obstruction is temporarily complete. The free, open drainage makes the operation comparatively free from danger. But the wound gradually heals by granulation, and eventually this extra scar tissue is added to the previous stricture tissue, and the constriction is worse than before any operation was performed. The exceptions to this are very rare indeed. But worst of all is the almost universal fecal incontinence following this operation. Within the last few months a man brought his wife to me to see if anything could be done for her incontinence, following a complete proctotomy for the relief of a rectal stricture. The case was one of the saddest possible, the husband stating that he should get a divorce if she could not be cured. The tubular stricture and the newly-formed scar tissue, with atrophy of the sphincters, precluded any possible operative proceedure that would give fecal continence.

After aseptic surgery became a fact, the surgeons were very greatly encouraged over the possibility of resecting the stricture tissue and reuniting the gut by end-to-end anastomosis, but this fond hope was blasted after the statistics of a few years' work were published. The deaths from peritonitis, from one or more or even all the sutures giving way from the tension, from peristalis of the gut or more often by the tension caused from the gut sufficiently to draw it well down in the lower pelvis, gave a discouraging mortality. The few cases that escaped death, with rare exceptions, found after one or two years that a stricture had re-formed at the seat of anastomosis. Then we realized that the brilliant results from intestinal anastomosis of the tract above the pelvic brim could not be attained within the pelvis. Anatomical reasons make it impossible. The rectal walls contain an enormous amount of fibrous tissue, far more indeed than any other part of the intestinal tract. Be-

sides this, the rectum is buried in a bed of fibrous connective tissue, and its fibrous tissue is intimately connected with the dense fibrous fasciæ of the pelvis. What happens after end-to-end anastomosis here? First, a circular scar is left at point of union. This scar is constantly irritated by peristalsis forcing formed fecal matter through it. The old pathologic law holds good: that fibrous tissue if continuously irritated becomes hypertrophied, and then contracts. Thus the circular fibrous tissue begins the process, and the contiguous fibrous tissue takes on the same process at the point of irritation. The pathogenic process begins and continues to add more contracting tissue to the periphery. This latter contracts and every month more tissue is added, eventually to re-form a true stricture. I doubt if there are exceptions to this rule. If there are cases, they have been kept studiously away from any of the clinical exhibitions of the societies in Chicago.

More recently, Howard Kelly and others have amputated the rectum just above the stricture, inverted the cut end of the rectum by suturing, and anastomosed the proximal end of the sigmoid into the rectum below the stricture. The same reason that caused the failure of end-to-end anastomosis of the rectum will operate to make the lateral anastomosis fail. Time after time I have made a lateral anastomosis of the sigmoid into the rectum in experimental work upon dogs and in every case, after a few weeks, the anastomosis opening would be so contracted that I could not insert my finger through it. I doubt very much if any of these cases would be relieved for more than one year after lateral anastomosis.

Naturally, after the surgical operations for the relief from rectal strictures had failed to give any encouragement to the surgeons, they began falling back upon the last resort for saving life and professional reputation, and inguinal colotomy was recommended as being sure of relief from obstruction and from the danger of perforation at the seat of ulceration above the stricture.

With these discouraging reports from the literature, I determined to devise some method of curing rectal strictures that would not increase the dangers of the old operations and at the same time would leave the sphincter muscles in their normal conditions, so that I could assure my patients that they could be left with perfect continence. The former methods failed: 1, because of new fibrous tissue forming and reuniting the severed stricture bands; 2, because of incontinence; 3, because of the high death-rate; 4, because of contraction of the lateral anastomosis opening.

I devised and advocated two operations: one for strictures located at or above the junction of the levator ani muscles of the rectum, and one for that class of strictures located below the levator ani muscles. For a stricture of the first class a laparotomy is made in the median line from pubis to umbilicus with the patient in the Trendelenburg posture. The sigmoid flexure is now seized and enough of it selected to bend down over the stricture and anastomose the sigmoid with the rectum below the stricture, either by sutures or a small Murphy button. In doing this two peritoneal surfaces are brought in apposition from the point of anastomosis. The abdomen is now closed as in an ordinary laparotomy and the drainage-tube remains from forty-eight to seventy-two hours, according to conditions. The button will come away in about a week, leaving a small fistulous opening between the sigmoid and rectum below the stricture. We have now only to clamp the whole or part of the septum from time to time until the stricture is severed. The severed ends can never unite, because a plastic operation is completed, with the sigmoid uniting the severed ends of the stricture. To do this I use a clamp forceps with a lock similar to an obstetric forceps, inserting one blade through the anus and into the sigmoid through the buttonhole and the other blade through the stricture along the rectal wall. The forceps are now locked and a rubber ring drawn over the handle so as to clamp the septum gradually for two days; then the handles are firmly compressed as an ordinary catch forceps and left to produce pressure atrophy of the septum until they completely sever it.

For that class of strictures located below the levator ani muscles, I produce a mucous fistula posterior to the stricture, so that when finally at a second operation the stricture is severed, this mucous tract lies between the severed ends of the stricture tissue, and prevents scar tissue forming to reunite them and re-form the stricture. This is done by taking a blunt-pointed aneurysmal needle threaded with heavy braided silk. The needle is pressed within the anal canal just above the internal sphincter muscle: the point of the needle is forced through the rectal wall back to the coccyx and then carried up posterior to all stricture tissue above the stricture, when the needle is again forced into the rectum. With a blunt hook passed through the stricture, the thread is now caught at the eye of the needle and drawn down. The needle is withdrawn and the suture loosely tied so as to form a seton surrounding the stricture tissue. The heavy thread gives free drainage, and none of the cases have had any symptoms of infection. This thread is left in place for three months, during which time the bowel is washed twice daily with boracic acid solution.

If the stricture is very tight I make a superficial incision on its anterior surface, just cutting the inner circle of scar and avoiding cutting the rectal wall, as a temporary relief from constipation. After three months the patient is put under anesthesia, the sutures removed and a grooved director passed along the fistulous tract. I now take a Paquelin cautery and sever the stricture down on the probe. I have performed this operation with perfect success in a number of cases. One case never returned for the second or complete operation; fortunately after three years she came to my gynecologic clinic at the Northwestern University a few weeks ago. I examined the rectum and had several of my students confirm the fact that there was no stricture. The patient said she left the suture in place until it cut its way out after many months. Some of these cases have been lost track of and may not have been cured. One case failed of a complete cure I know, as she comes to my clinic when I desire it. I am now satisfied why she was not permanently relieved. The suture was passed too near the stricture both below and above, and all the hypertrophied tissue was not included. Both these operations have been severely criticised, but I shall keep improving them until some one gives us some method that is better.

WE ARE informed that Professor Arons has been offered the chair of physics, left vacant by Roentgen's departure. The *Gazette Medicale de Paris* remarks that in this the Bavarian University is faithful to its traditions in welcoming scientists persecuted for their political opinions. In 1848 the chair of pathology was offered to the young Virchow, persecuted by the Prussian Government.

Therapeutics.

Phenocoll in Malaria.

In the *American Gynecological and Obstetrical Journal*, Dr. Cesare Mondini of Brooklyn publishes a note relative to the value of phenocoll in malaria. The physiologic and therapeutic powers of the drug have been studied by Professors Mosso, Albertini, Cervello and Golgi. Upon the basis founded by these investigators Dr. Mondini has tried phenocoll in all the febrile conditions which he had diagnosticated as of malarial origin. The salt which he employed in all cases was the hydrochlorate. The doses prescribed varied from 1½ grams (nearly 24 grains) to 2 grams (about 30 grains) daily for children. The results were brilliant. Sometimes the amelioration was temporary and in some cases the effects were negative. He had, however, made use of phenocoll in over a hundred cases and met with but few failures. These were due less to the action of the drug, he thinks, than to the manner in which it was used. Dr. Mondini appended brief memoranda of several typical cases treated by phenocoll, one in particular being that of a child, 5 years of age, who had suffered from malarial intoxication for a year and who had an enormous splenic tumor. He was rebellious to quinin, but was cured by phenocoll.—*Med. Bull.*

Diuretics.

Martz, of the Faculty of Medicine in Lyons, gives a number of prescriptions for diuretic purposes. Pills composed as follows:

Extract of convallaria.
Powdered convallaria, āā.....gr. i
Make in one pill, and give a pill night and morning.
Or a syrup made of:
Extract of convallaria.....ʒiv
Syrup of bitter orange.....ʒvi
A teaspoonful night and morning.
In other cases we may use:
R. Tinct. of squill.....m. lxxv
Syrup of bitter orange.....ʒi
Distilled water.....ʒiii
One teaspoonful every few hours.
Or
R. Extract of squill.
Powdered squill, āā.....gr. i
Make into one pill and give one night and morning.
Or
R. Theobromin.....gr. vii
Place in one cachet and give four a day.
Or
R. Caffein.....gr. xv
Benzoate of sodium.....gr. xxx
Syrup of bitter orange.....ʒi
Water.....ʒiv
This may all be taken in twenty-four hours in divided doses.
Or again:
Powdered digitalis
Powdered squill
Powdered scammony, āā.....gr. i
Make into one pill, and give one such night and morning.
Or,
Carbonate of lithium.....gr. vii
Lemonade with carbonated water.....Oi
This to be drunk each day.
Or, by the bowel:
Nitrate of potassium.....gr. xxx
Oxymel of squill.....ʒvi
Milk.....ʒiii
This to be given by the bowel.—*La France Medicale.*

Treatment of Anal Fissure.

M. Jules, in the *Gaz. de Gynecol.*, recommends the following treatment: The anus being partly opened and the fissure discovered, a small tampon of absorbent cotton saturated with a 1 per cent. solution of cocain hydrochlorate is applied. At the end of five minutes local anesthesia is obtained, and the fissure can be touched with pure ichthyol. This procedure is renewed on the following days. After the fourth or fifth application, the tampon of cocain is introduced as far as the internal sphincter, and at the end of five minutes it is possible to make a slight dilatation of the anus with Nélaton's dilator. In this way the fissure is distinctly exposed to view and can be thoroughly touched with ichthyol.

Scrofulosis.

In scrofulous affections of the glands, skin and mucous membranes Saint Philippe finds the iodid of arsenic of great value. He prescribes it in the following form:

R. Iodid of arsenic.....gr. vii
Distilled water.....ʒiss

Dissolve and give 5, 10, 20, or 30 drops of this solution a day, according to the age of the child.

As the remedy is an active one, it is wise, in his opinion, to commence with a small dose—for example, only a drop may be given morning and night, and this dose gradually increased. —*Therapeutic Gazette.*

Lactic Acid in Vaginitis.

According to the *Jour. of Medicine and Science*, Ilkewitsch favors the use of lactic acid in the treatment of vaginitis and endometritis, basing its value upon the fact that the normal acidity and consequent germicidal power of normal vaginal secretion is due to lactic acid. He applies it to cervical erosions and to the diseased uterine mucosa in strength varying from 50 to 100 per cent., and in other cases in irrigating solutions of 3 per cent.

Local Application in Acute Rheumatism.

R. Acidi salicylici
Olei terebinthinæ
Lanolin, āā.....ʒiv
Adipis.....ʒii

M. Sig. Apply to joints and cover with non-absorbent cotton, gutta-percha tissue, and over all a bandage. After the superficial epidermis has been destroyed, the oil of turpentin should be left out of the formula.

Treatment of Ozena With Citric Acid.

Hamm (*Munch. Med. Woch.; Med. News*) recommends the application of citric acid in ozena, as the best means of taking away the terrible odor, which not only disgusts all with whom the patient comes in contact, but also often destroys the appetite of the afflicted individual. Hence, the mere removal of the odor is often followed by a marked improvement in the patient's general condition. The citric acid, however, has also a slight beneficial effect on the nasal lesions. It can be used pure, or better, mixed in equal parts with sugar of milk. The nose is thoroughly cleansed in the morning and the powder is then blown into it, and the insufflation is repeated at noon and at night. The deodorizing effects continue some days after the discontinuance of the powder, and as the citric acid has no harmful action, it may be used as often as necessary.

Treatment of Eczema by Ointments Containing Sugar.

Hodara of Constantinople uses for cases of moist eczema, impetigo ecthyma, subnasal sycosis, and other skin diseases of vesicular or pustular nature, an ointment of zinc oxid and sulphur containing sugar, the desiccative and keratoplastic properties of which he highly values.

R. Sacchari pulv
Zinci oxidi
Lanolini
Vaselini
Sulphuris sublim, āā.....ʒxx
Glycerini, āā.....ʒx

M. Ft. unguentum. Sig. External use. For subnasal sycosis he advises continuous application of the ointment to affected parts of the upper lip, and in addition repeated swabbing of the nasal mucous membrane with a solution of silver nitrate, at first 1 per cent. gradually increased to 4 per cent. As improvement advances, the ointment may be used but once a day, but swabbing should be continued for a time after the

cure is completed, to avoid a relapse. Hodara has thus effected cures without epilation.

SEBORRHEAL ECZEMA.

For seborrheal eczema of a psoriaform type he prescribes as follows:

℞ Sacchari pulv. 3xx
Chrysarobini 3i-ii
Glycerini
Sulphuris sublim, āā 3x
Lanolini
Vaselini, āā 3xxx
M. Ft. unguentum. Sig. External use.

Dyspepsia.

℞ Sodii bicarbonatis 3i
Tinct. nucis vomicæ 3i
Infusi gentianæ, q. s. ad ..... ℥viii
M. Sig. Tablespoonful before meals, in dyspepsia with deficient secretion of gastric juice.

℞ Acidi hydrochlorici diluti 3iv
Tinct. gentianæ comp ..... ℥iiss
M. Sig. Teaspoonful in water after meals, in atonic dyspepsia with deficient secretion of gastric juice:

℞ Acidi hydrochlorici diluti 3vi
Tinct. capsici 3iv
Tinct. nucis vomicæ 3ii
Tinct. quassiæ, q. s. ad ..... ℥iv
M. Sig. Teaspoonful in water after meals for atonic dyspepsia of alcohol drinkers.

℞ Acidi hydrocyanici diluti ..... gtt. xl
Tinct. belladonnæ 3iii
Bismuthi subnitratis 3vi
Aquæ, q. s. ad ..... ℥iii
M. Sig. Shake well. Teaspoonful an hour before meals for painful dyspepsia with excessive gastric secretion.

Treatment of Gastralgia, Gastritis and Gastrodynia.

Dr. Thos. Stretch Dowse, in the "Pocket Therapist" says that these conditions are sometimes associated with dyspepsia. They may be peptic (rarely), they may be congestive, associated with gastric catarrh, or they may be neurotic (neuralgia). It is sometimes at first somewhat difficult to diagnose these states from derangements of the gall-duct, but the diagnosis is easily cleared up by the absence of bile in the feces. Gastritis of an acute character rarely exists, unless it is the result of some direct irritant. Congestive gastritis, leading to catarrh, vomiting and ulceration, is much more common, and must be treated more or less as a dyspepsia. It is here that we have a gastrodynia. Gastralgia, in the writer's experience, is a pure neurose and requires neurotic treatment. The pain comes on in paroxysms, and may be relieved by opium, quinin, antipyrin, chloroform, ether, peppermint, cocain, menthol, cannabis indica, and the bromids. During the paroxysms of pain this draught is very effective:

℞ Chloralis ..... gr. xv
Liq. atropiæ ..... m. ii
Ammon bromid 3ss
Extracti cannabis indicæ ..... gr. ¼
Aquæ, ad ..... ℥ii
M. Ft. Haust. Sig. To be repeated in one hour if necessary.

Faradization and massage are very useful, especially if dilatation exists. Lavage of the stomach is often of very great value in these cases.

Convulsions in Children.

When a period of intensely hot weather occurs late in the season and severe intestinal diseases develop in children as a consequence, it has been noted that their ailments are more frequently complicated by convulsions than under similar circumstances earlier in the summer. The wear and tear of life during the difficult heated months has apparently augmented the almost normal instability of the infantile nervous system, and as a consequence convulsive explosions of nerve force are to be expected. An interesting discussion of convulsions in children at the recent meeting of the British Medical Association brings out the present English views as to the etiology and treatment of the affection, and it seems a timely topic for the attention of all general practitioners.

Drs. Gossage and Coutts, to whom the subject was referred for special consideration and introduction to the Section, suggested in their conclusions the following points for discussion: First, the frequency of convulsions in children has been vastly overrated; second, the immediate danger from future neurotic manifestations has been underestimated; third, the predisposing causes are of much more importance than the exciting causes; the slighter exciting causes will not produce convulsions except in predisposed children. There was very little disagreement with these propositions. The overestimation of the danger of convulsions, it was pointed out, came from the fact that in the terminal stages of many diseases of infancy convulsive movements occur, and that the death was then, unwarrantably, of course, set down to convulsions. As to predisposition, nervous heredity, etc., statistics were quoted to show that in over one-half of the cases in which patients reached adult life after having had convulsions in childhood they suffered from some variety of neuroses. These were not due so much to the malnutrition of the nervous system during infancy or to damage during the convulsive stage as to congenital faulty development. It is particularly the children of nervous, gouty, rheumatic, or diabetic parents that are liable to fits, and it is in patients in whom such a family diathesis is known to exist that any extreme of reflex irritation must be repressed or it will result in a nervous explosion. As to treatment the discussion did not bring out anything striking, except, perhaps, by negation of the necessity for active measures. The referents said:

All that is necessary during an actual attack of convulsions in most cases is to loosen the clothing about the neck, chest, and abdomen, and lay the child on its back with the head slightly raised until it recovers from the fit and the subsequent drowsiness. The placing of the child in a hot bath, as is such a common practice, probably does no harm, and if the child be in feeble health it may be advantageous to use a mustard bath, which has decided stimulating properties.

Very few American physicians would be content to be as inactive as our English friends suggest with anxious parents and relatives about. For the very severe convulsions or prolonged unconsciousness after a fit inhalations of chloroform even to deep narcosis were suggested. Small doses of the bromids were recommended for some days after the attack. The recurrence of an attack suggested the continuance of the bromids for weeks at least, any harm that may be supposed to attend their use being more than counterbalanced by their benefit if they prevented the return of the convulsions.—*Medical News.*

Chlorosis.

Regarding the treatment of this disease, we quote from "Progressive Medicine," Vol. ii, June, 1899: "Brosin reports upon the treatment of cases of chlorosis with hot baths. The author treated some fifty cases, using baths of 32° R., with cool applications about the head during the fifteen to thirty minutes which were spent in the bath. After the bath a rapid cool douche was administered, and thorough friction was then employed, the patient finally resting one hour in the recumbent posture. Three baths a week during four to six weeks constituted the treatment. The results were excellent, the patients feeling extraordinary well after the baths. Many of the symptoms of the disease were quickly controlled by this treatment, and the general effect upon the disease was satisfactory. De Dominicis decries the venesections that have been recommended in recent years, which he believes act only in occasional instances by suggestion. He himself recommends transfusion of blood."

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Journal of the Medical Sciences (Philadelphia), September.

1.—*Operations in Gastric Ulcer. Leonard A. Bidwell.
2.—*Epithelioma as a Sequel of Psoriasis and the Probability of its Arsenical Origin. M. B. Hartzell.
3.—*Case of Cystic Degeneration of Kidneys, with General Dermatitis Exfoliative. G. Parker.
4.— Purulent Encephalitis and Cerebral Abscess in New-Born Due to Infection Through the Umbilicus. Guy Hinsdale.
5.—*Congenital Idiopathic Dilatation of the Colon. J. P. Crozer Griffith.
6.—*Toxicity of the Urine. F. Forchheimer and R. W. Stewart.
7.— The Disease of Convulsive Tic (Gilles De La Tourette's Disease). Bernard Oettinger.
8.— Aneurysm of Coronary Artery; Report of Two Cases. Joseph A. Capps.
9.— Critical Summary of Recent Literature Concerning the Mosquito as an Agent in Transmission of Malaria. Thomas B. Futcher.

Journal of Nervous and Mental Diseases (N. Y.), August.

10.— President's Address, American Neurological Association. James Hendrie Lloyd.
11.—*Edema of Paralyzed Limbs in Hemiplegia, with Report of an Unusual Case. Charles Lewis Allen.
12.—*Tumor of Oblongata Presenting Ataxia and Astereognosis as most Prominent Early Symptoms. F. X. Dercum.
13.— Interesting Hysterical Phenomena—Transfer of Tactile to Visual Sensation. Frank F. Fry.
14.— Notes on Arrangement and Function of Cell Groups in Sacral Region of the Spinal Cord. B. Onuf.

Medical Dial (Minneapolis), August.

15.—*Surgical Treatment of the Urethra in Old Men. D. R. Greenlee.
16.—*Certain Landmarks in Prognosis of Modern Medicine. Franklin Staples.

Canadian Journal of Medicine and Surgery (Toronto), September.

17.— Present Attitude of Medical Profession toward Illegal Practitioners. Thomas J. Hillis.
18.— Plea of Insanity in Medical Jurisprudence. James Russell.
19.— Some Opinions on "No Evidence in America of Pre-Columbian Leprosy." Albert S. Ashmead.

Buffalo Medical Journal, September.

20.—*Importance of Early Diagnosis and Surgical Intervention in Fractures of Skull. Marshall Clinton.
21.— Neurasthenia from Standpoint of General Practitioner. C. W. Coulter.
22.— Experience, Judgment and Luck. Nelson W. Wilson.
23.— What Shall be the Minimum Standard for Admission to Study and Practice of Medicine. William Warren Potter.
24.— Oculist vs. Optician. A Protest. John J. Finerty.
25.— Note on Arecolin. J. C. Clemesha.

Medical Herald (St. Joseph, Mo.), August.

26.— Report of Operative Cases. B. L. Eastman.
27.— Leucorrhea and its Treatment. Robert C. Kenner.
28.—*Modern Treatment of Fractures. Edward A. Tracy.
29.—*Etiology of Phthisis—Summary of Scientific Points Involved in Churchill Theory. R. W. Gardner.

Dominion Medical Monthly (Toronto, Ont.), August.

30.— Treatment of Appendicitis. T. K. Holmes.
31.— Anencephalus. George Elliott.
32.— Strange Case of Exfoliation. L. H. Marks.

Hot Springs Medical Journal (Ark.), August.

33.—*Report of Unique Case of Intestinal Obstruction. James T. Jelks.

American Journal of Surgery and Gynecology (St. Louis, Mo.), August.

34.—*Surgery and Insanity. Henry Waldo Coe.
35.— Gynecologist in Relation to the Insane. Ernest Hall.
36.—*Vaginal Section with Report of Cases. A. Miles Taylor.
37.—*Vaginal Hysterectomy—Accidents and Complications. Walter Lindley.
38.— The Sigmoid—Some of its Diseases. Wellington Burke.
39.—*Abdominal Pain. C. P. Thomas.
40.— An Operation for Cancer of Rectum Which did not Cure. C. E. Case.
41.— Some Cases Seen at Clinic of Professor A. Martin, Greifswald, Germany. O. Beverly Campbell.
42.— Cases of Carcinoma Uteri in Advanced Pregnancy. Henry J. Kreutzmann.
43.—*Surgical Complications of Pneumonia. Leonard Freeman.

Post Graduate (N. Y.), August.

44.—*Sterility in Women; Some of the Causes, etc. J. R. Nilsen.
45.—*Hydramnios. John O. Polak.

Annals of Gynecology and Pediatry (Boston), August.

46.— Colloid Carcinoma of Ovary. Charles Greene Cumston.
47.—*Indications for Cesarean Section as Compared with those for Symphysiotomy, Craniotomy and Premature Induction of Labor. Fancourt Barnes.

Medical and Surgical Bulletin (Nashville, Tenn.), August.

48.— Syphilitic Stricture of Rectum; Two Cases with Operations. A. B. Cooke.
49.— Treatment of Chronic Tubercular Pulmonary Consumption. Q. C. Smith.

Medical Age (Detroit, Mich.), August 25.

50.—*Is Leprosy Curable? Roger S. Chew.
51.—*Simulated Disease of Mind and Nervous System. Samuel Ball.

Columbus Medical Journal (Ohio), August 21.

52.— How the General Practician Can Aid in Advancement of Psychiatry. E. G. Carpenter.

Northwestern Lancet (St. Paul, Minn.), August 15.

53.—*Determination of Sex. F. A. Dunsmoor.
54.— Advance of Medical Education in United States. Franklin Staples.
55.—*Diet in Typhoid Fever. E. J. Abbott.
56.— Bronchial Pneumonia or Catarrhal Pneumonia. Emery H. Bagley.

Pediatrics (N. Y.), August 15.

57.—*Malaria in Children. Dr. Moncorvo.
58.— Ankylosis of Hip-Joint. Henry Ling Taylor.
59.— Aneurysm of Aorta in Child. Bertram Rogers.
60.—*Infant Feeding. Hugh N. Leavell.

Interstate Medical Journal (St. Louis, Mo.), August.

61.—*Cholera Infantum—Consideration of Poisonous Products of Albuminous Decomposition as Factor in Etiology of Summer Diarrhea in Infants. W. L. Brown.
62.—*Diagnosis and Treatment of Gall-Stones. Bernard S. Simpson.
63.— Diagnosis of Fevers. D. W. Prentiss.
64.— Case of Esophagismus of Gouty Origin. Heinrich Stern.

Medical Register (Richmond, Va.), August.

65.— Interesting Case of Hereditary Syphilitic Dactylitis. Lewis C. Bosher.
66.—*Relations of Coroner to Undertaker. William H. Taylor.
67.— Summer Diarrhea in Infancy. Jesse Ewell.
68.— Facial Paralysis. W. S. Beazley.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), August.

69.— Diagnosis of Septic Diseases of the Brain and its Membrane from Standpoint of Oculist and Aurist. Eugene Smith.
70.— Report of Case of Marked Disturbance of Digestive Tract Caused by Undeveloped Uterus. James M. Martin.
71.—*Study of Some Conditions that Lead to Fibroid Changes. Willis S. Anderson.
72.—*Case of Appendicitis with Unusual Course. H. M. Joy.
73.— Primary Syphilis. Ralph H. Spencer.
74.—*Treatment of Diseases of Ear. W. F. Strangways.
75.—*Cause and Prevention of Overcrowding in the Profession. Geo. H. Sherman.
76.— Epidemic at Siboney. C. T. Newkirk.
77.— Ureteral Fistula. Ernest T. Tappey.
78.— Purpura Hemorrhagica. T. M. Williamson.
79.— Anatomy and Physiology of Erector Spinæ Muscle, and its Bearings on Spinal Curvatures and Their Treatment. E. K. Bacon.
80.—*Matrimony. N. E. Aronstam.

Medical Monograph (Topeka, Kan.), August.

81.— Treatment of Insanity in General Practice. L. L. Uhls.
82.—*Treatment of Inebriety and Drug Addictions. M. P. Sexton.
83.—*Neurasthenia, its Diagnosis and Treatment. John Punton.
84.—*Some Observations in Recent Epidemic of Cerebrospinal Meningitis. J. W. Porter.
85.—*Injuries to the Head, Including Fractures of Skull, with Report of Several Cases. C. F. Leslie.
86.— Insanity as Defense in Criminal Cases. B. D. Eastman.

Medical News (N. Y.), September 2 and 9.

87.—*Radical Cure of Hernia. Wm. B. Coley.
88.—*Cerebrospinal Meningitis. Joseph W. Irwin.
89.—*Treatment of Tuberculosis. Lawrence F. Flick.
90.—*Empyema From Surgical Standpoint. John C. Munro.
91.— Case of Sarcoma of Tonsil. Three Removals, Recurrence after Each.
92.— Death from Metastases in Mesentery and Bowel. J. Morrison Ray.
93.—*The Specific Cause of Yellow Fever: A Reply to Dr. G. Sanarelli. Walter Reed and James Carroll.
94.—*Cardioesophageal Gush and Click. R. G. Curtin.
95.—*The Hydriatic Treatment of Pneumonia. Richard K. Macalester.
96.— A New Method of Treating Complete Tear of the Rectovaginal Septum by Turning Down an Apron into the Rectum and by Buried Suture Through the Sphincter Muscle. Howard A. Kelly.

New York Medical Journal, September 9.

97.—*Fracture of the Lower End of the Radius. Carl Beck.
98.—*A Test Case for Taste. Nathan T. Beers.
99.—*Adenocarcinoma of the Nose. Report of a Case. James E. Newcomb.
100.— Traumatic Neuropsychosis. Report of a Case. C. E. Ide.
101.—*Synechiotomy of the Stapes for Improving the Hearing in Chronic Suppurative Otitis Media Residua. Edward Bradford Dench.
102.—*Bovine Tuberculosis in its Relation to Man. Edward Moore.
103.—*Dust in the Etiology of Tuberculosis. Max Girsdansky.
104.—*A Case of Tetanus Treated with Carbolic Acid. D. Flavel Woods.

Medical Record, September 9.

105.—*Reflex Irritation, with Special Reference to Eye-Strain, a Factor in Nervous and Mental Diseases. C. A. Drew.
106.—*Scarlet Fever Reproduced by Inoculation; Some Important Points Deduced Therefrom. Joseph Williams Stickler.
107.— On Ozone and its Generation by the Static Current for Therapeutic Use. J. Mount Bleyer.
108.— Interstitial Pregnancy and Report of a Case. Chas. F. Smith.
109.— Self-Inflicted Wounds in Both Eyes, Both Ears, Tongue and Larynx, Leading to Thrombosis of the Sinus Transversus. George Reuling.
110.— Tetanus of Nineteen Days' Duration Successfully Treated with Antitoxin. William M. James.
111.— A Case of Primary Renal Tuberculosis of Twenty Years' Standing. Jacob Frank.

Philadelphia Medical Journal, September 9.

112.—*Ninety-three Consecutive Abdominal Sections without a Death, with Clinical and Pathologic reports. Hunter Robb.

113.—*Dysphonia-Relief with the Use of the Galvanic Current. T. C. Christy.
114.— The Colorado Climate as a Remedy for Phthisis. Alfred Mann.
115.—*A Novel Treatment of Certain Forms of Headache, Deafness, and of Tinnitus Aurium. E. Larue Vansant.
116.— The Power of Suggestion. Arthur MacDonald.
117.— Report of a Case of Malta Fever. Walter Cox.

Boston Medical and Surgical Journal, September 7.

118.—*The Effects of Training: A Study of the Harvard University Crew. Eugene A. Darling.
119.— Two Cases of Injury of the Cord Resulting from Fracture of the Spine. John Jenks Thomas.
120.—*The Rôle of the Staphylococcus in Skin Diseases. Chas. J. White.
121.—*Multiple Ulcers of the Vulva and Vagina in Typhoid Fever. August J. Lartigau.

Maryland Medical Journal, September 9.

122.—*Shall we Operate in Every Case of Appendicitis? Virginius Harrison.

Cincinnati Lancet-Clinic, September 9.

123.—*Does the Practice of Medicine Pay? George J. Monroe.
124.— Ophthalmic Memoranda. David DeBeck.

Medical Review, September 2 and 9.

125.— Study of a Case of Feigned Eruption. Martin F. Engman and Sidney I. Schwab.
126.—*Ligation of the Dorsal Vein of the Penis for Functional Impotence. G. Wiley Broome.
127.— A Case of Senile Hypertrophied Prostate with Marked Urinary Obstruction; Bottini Operation; Relief. Later, Herniotomy, Sepsis and Erysipelas. Death. Bransford Lewis.

AMERICAN.

1. **Operations in Gastric Ulcer.**—Noticing first the comparative newness of this line of surgery and its importance, Bidwell discusses the symptoms and physical signs of the condition of perforation of round ulcer of the stomach and insists on the importance of prompt operation. In view of the amount of shock, everything should be done to keep the patient's temperature up. A brandy enema may be required and occasionally the intravenous injection of saline solution. On account of the tenderness of the abdomen, vigorous antiseptic measures are contraindicated before anesthesia but after anesthesia has occurred, thorough scrubbing and cleansing can be done. The incision should be about 3 inches long, in the left semilunar line or in the middle above the umbilicus. There is usually much gas in the peritoneum and considerable purulent fluid if the ulcer has perforated anteriorly. When found the adhesions should be separated, the extravasated contents sponged away and the perforation be brought forward as far as possible. The ulcer should be invaginated and the adjacent part of the stomach wall coapted over it by one or two rows of Halsted or Lembert sutures, inserted at a considerable distance from the ulcer so as to be in healthy tissue. The peritoneal cavity should then be thoroughly flushed with normal salt solution, and if the gastric contents have reached the lower part of the abdomen it will be necessary to make a counteropening over the pubes and in addition irrigate Douglas' sac. Special care must be taken to thoroughly irrigate the upper surface of the liver and the region of the spleen, to prevent subphrenic abscess. Dainage-tubes are inserted and the wound closed in the ordinary way. If no extravasation is found but there is some injection of the peritoneum, with other marked signs of perforation, we should suspect the rupture of the ulcer in the posterior gastric wall. To reach this, after shutting off the general cavity with sponges, the gastrocolic omentum must be torn through, opening up the lesser cavity of the peritoneum. If here there are no signs of extravasation, we may assume that there is no perforation, or that adhesions have shut it off. If extravasation be present, the ulcer must be found and sutured as before described, and the lesser cavity be carefully irrigated, special care being taken to thoroughly cleanse the portions above and behind the liver. The operation must be as rapid as possible to minimize the shock. The patient should be fed by nutrient enemata and suppositories for the first three days, then cautiously by the mouth with predigested foods. The gauze drain and the suprapubic tube should be removed at the end of three days. The rubber tube at the end of the upper opening should remain a few days longer. When adhesions have formed prior to perforation, there may be communication with the colon, the pericardium or the small intestines or a localized abscess between the stomach and the under surface of the liver, or between the stomach and the anterior surface of the pancreas and duodenum. In either of these cases, it should be opened as high up as possible in the middle line and drained, with very cautious irrigation to avoid breaking down adhesions. In some cases when there is no abdominal swelling, but evidence of abscess by dulness over the left lower costal region, it can best be opened by resection of the eight and ninth ribs in the axillary line, the pleura, of course, being opened, but the diaphragmatic portion sutured to the costal pleura before the diaphragm is divided. The author discusses the statistics of the operation for perforation and subphrenic abscess, its uses and prognosis. He concludes his paper with the following list of cases in which the operation should be done: 1. In all cases of perforation at the very earliest possible moment; also in subphrenic abscess. 2. In cases of hemorrhage *a*, when there is continual oozing of blood, especially if the stomach be dilated, and *b*, in cases of repeated severe hemorrhage. 3. In cases where there is severe pain and vomiting unaffected by treatment, and which is producing progressive emaciation. 4. In cases of dilatation of the stomach from contraction within or from adhesions outside the stomach. The operations to be performed are: In Class 1, laparotomy and suture of the ulcer; in Class 2, gastrotomy and suture of the ulcer, with a purse-string suture, combined with gastro-enterostomy; in Class 3, gastro-enterostomy, in order to give physiologic rest to the ulcer; and in Class 4, either gastro-enterostomy, or, if the pylorus be affected, pyloroplasty or pylorectomy.

2. **Epithelioma After Psoriasis.**—Hartzell reports a case of epithelioma occurring on the heel of a woman 35 years old after psoriasis of many years' standing, and discusses the literature of similar cases. He thinks the evidence presented thus far permits us to conclude that the arsenical treatment of psoriasis has a causal relation to epithelioma and calls attention to the importance of this subject in connection with recent theories of the pathogenesis of carcinoma in general.

3. **Cystic Degeneration of the Kidneys with Exfoliative Dermatitis.**—Parker describes a case of cystic kidney degeneration followed by general dermatitis exfoliativa. The combination of these two affections, he thinks, is rather unique. He discusses the theory of cystic kidney degeneration and thinks it impossible to apply any of the retention theories to their formation.

5. **Congenital Dilatation of the Colon.**—Griffith uses this term to designate an actual dilatation present at birth and a congenital tendency to early dilatation, the latter being probably much more common. He reports in detail a case with autopsy and gives a synopsis of others in the literature which may fall under this head. The prognosis of these cases is unfavorable. Eighteen of the twenty-four enumerated terminated fatally, only three of the patients reached adult life. In all cases, there is great dilatation of the large intestines with thickening, the small intestines being normal. The treatment consists in attention to the general health, carefully performed massage, electricity, and emptying of the bowels by purgatives or enemata, which, while weakening, are useful here; and in case it is not relieved, early operation.

6. **Toxicity of Urine.**—Forchheimer and Stewart report experiments as to the toxicity of urine obtained from a number of patients, many of them suffering from various morbid conditions. They used it fresh, or fresh and filtered, boiled, and with boracic acid added. Examining their table, they point to the fact that those two methods which excluded bacterial activity absolutely after the urine had passed are followed by comparatively no mortality. In fresh urine immediately used there was only one death out of 14; in filtered urine, no deaths even after the urine had been kept as long as four days; in urine with boracic acid used before the lapse of 24 hours, a mortality of 39 per cent.; after 24 hours, a mortality of 43 per cent.; in boiled urine, kept for longer than 24 hours, a mortality of 59 per cent., and in fresh urine kept for longer than twenty-four hours a mortality of 66 per cent. They conclude that most of the toxicity of urine is due to formation of substances the result of the action of bacteria on some body or bodies in the urine and that they are not justified in stating that there is no other toxicity than that due to bacteria, but they are justified in claiming that in all those investigations that have been made where this activity has been overlooked, the results must be regarded as inconclusive.

11. **Edema in Hemiplegia.**—Allen reports a case of severe edema of the arm and, to some extent, the leg of the paralyzed

side, coming on some weeks after the attack. The swelling was excessive, especially in the arm. The patient died of exhaustion and diarrhea some months after the beginning of the attack and the autopsy showed no pathologic condition to account for the edema. In searching the literature, the author finds but three cases entirely comparable to his own.

12. **Tumor of the Oblongata.**—Dercum reports a case which was diagnosed in life as tumor of the medulla. The most striking feature of the case was the symptom of astereognosis which had never been previously observed from tumors in this situation. The patient could not tell the position of the right arm. There was distinct loss of muscular sense, diminution of pain sense and disorders of the localization of tactile impressions. Only just before death were there any symptoms referred to the left arm and then they were very slight. The autopsy showed a large irregular mass spreading from the occipital bone to the right side of the junction of the pons and medulla, forming a slight depression in the right lobe of the cerebellum, and markedly distorting the medulla, the fibers of which for a short distance above and below showed by Marchi's staining method, degeneration of the pyramidal tracts, posterior and lateral columns and right direct cerebellar tract.

15. **Surgical Treatment of the Urethra in Old Age.**—Greenlee reports briefly the results of treatment of difficult micturition in old men, associated with prostatic hypertrophy and stricture. His practice is to use dilatation by graded sounds, assuming that in the majority of cases at least there was an original contraction of the urethral cavity. The results were very generally good. He reports also a case in which there were similar symptoms with extensive hypertrophy of right side of the prostate gland and the corresponding testicle was normal, while that of the left side had been removed in early life. Removal of the remaining organ caused complete cure.

16. **Certain Landmarks in the Prognosis of Modern Medicine.**—This article considers the subjects of anesthesia—after fifty years, the development of State Medicine, and the advent of bacteriology.

20. **Fractures of the Skull.**—Some years ago Bluhm collected a series of over 900 cases with the intent of demonstrating a lessened mortality in delayed operation following fracture of the skull. These statistics show that in the immediate operation the mortality reaches 53 per cent., while in the delayed or later operation, the mortality is only 33 per cent. Clinton points out that in these statistics no statement was made to the ultimate condition of the patients with reference to epilepsy, insanity, etc., or what portion of the 53 per cent. would come under the head of hopeless cases. The object of his paper is to show that to avoid these late results, early operation is most advisable.

28. **Modern Treatment of Fractures.**—Tracy calls attention to the principal indications in fractures, that is, to get fixation of the bone in the natural position, there being only one fracture best treated without fixative apparatus, that is, fracture of the neck of the femur in the aged. In this case the best surgical treatment is purely medical. In all other fractures mechanical fixation, where it can be obtained, is necessary. He alludes to the use of plaster of paris for fractures as uncertain, inefficient, and concealing the real state of affairs, and thinks that it will be soon relegated to disuse. Splints made of felting or wood fiber, especially the latter, are preferable.

29.—This article was published in this JOURNAL, March 4, Vol. xxxii, p. 479.

33. **Intestinal Obstructions.**—Jelks reports a case in which there was pain, constipation and vomiting, which later became stercoraceous. The diagnosis was obstruction, probably due to adhesive bands, as the patient had undergone a laparotomy some years before. On operation, instead of obstruction, they found a gangrenous appendicitis with septic peritonitis. In discussing the case he takes up the subject of the time and necessity for operation in appendicitis and thinks that in a great majority of cases where skilled surgeons and the necessary appliances can not be had the majority of patients will do better without operation.

34. **Surgery and Insanity.**—The point in Coe's paper is the necessity of watchfulness and care after surgical operations in order to avoid post-operative mental disturbances.

36. **Vaginal Section.**—After describing preparation and technic, Taylor reports a large number of cases operated on by the vaginal route and believes that its advantages are unquestionable. It gives less shock to the patient: the operator can work with more ease; recovery is more rapid; unabsorbable ligatures may be tied and left exposed until ready to be taken out; it permits a second operation, if necessary, with little danger, and the nervous phenomena are much less pronounced and serious.

37. **Vaginal Hysterectomy.**—Lindley reports four cases of vaginal hysterectomy, in two of which there was serious bleeding, occurring late after the operation. In another there was an instrument broken in the vagina and in still another death occurred apparently from septic peritonitis without any known cause.

39. **Abdominal Pain.**—Thomas calls attention to the importance of the symptom of abdominal pain. While about 50 per cent. of the cases will recover with simple anodynes, others indicate serious conditions, such as hepatic lithiasis, appendicitis, nephrolithiasis, intestinal obstruction, tubal pregnancy, etc. He believes that severe abdominal pain should be thoroughly investigated in every case and that whoever does so as a routine practice will not regret it.

43. **Surgical Complications of Pneumonia.**—The complications noticed by Freeman are pneumococcus arthritis, local abscess, peritonitis, and septicemia, empyemata, and abscesses of the lungs.

44. **Sterility in Women.**—Nilsen discusses the cause of sterility in women and calls attention to the fact that very minute lesions may have their influence.

45. **Hydramnios.**—In this paper Polak discusses the condition of excessive secretion of amniotic fluid and its consequences. He reports a case and discusses the principal causes and complications and the importance and significance of the condition. The excessive amount of fluid is a cause of malpresentation. It also is one of the most common causes of the excessive vomiting of pregnancy. It favors prolapse of the cord, post-partum hemorrhage, inversion, and may be placed well to the front in the etiology of repeated abortion. It is, however, admitted that syphilis is coincident with hydramnios in the majority of cases and the part that it plays in these abortions must be considered. Treatment depends largely on the degree of the condition and the essential indications in each particular case. The maternal condition may often demand early rupture of the membranes but especial care should be taken to prevent too rapid escape of the fluid. He has found that rupturing of the sac from the cervix with the patient in an exaggerated Trendelenburg position has its advantages in this regard. Instrumental and manual delivery should be avoided when possible on account of the increased tendency to sepsis. The third stage of labor should be managed with the greatest caution and in no way hurried unless hemorrhage occurs.

47. **Cesarean Section.**—Fancourt Barnes concludes, as regards this operation as compared with symphysiotomy, that the latter has not justified its existence and he can not help thinking that in a few years the eminent obstetricians who have been advocating it will abandon the operation. Induction of premature labor within certain limits will always hold a recognized and useful position among obstetric operations, and we are forced to the conclusion after a careful study of the latest figures that have been published on Cesarean section, that it is a scientific and justifiable operation and that it will be more widely resorted to in the future, as the science of obstetrics advances, than it has in the past.

50. **Is Leprosy Curable?**—In opposition to the general opinion, Dr. Roger S. Chew maintains the affirmative. He gives his experience with a large number of remedies and a table showing results of the treatment, by different remedies, asclepias, anacardium, arsenic, chaulmoogra oil, chrysarobin, etc., which are very variable, though the total of the cases gives 156 cures to 612 failures. He finally obtained a crystalline substance from a maceration of the roots, leaves and seeds of a three year growth of *Gynocardia lancifoliata*, and gives its chemical formula at length in combination with gold. He calls this remedy "Gynocyanuridzarin" and when given internally to dogs and cats in doses from 0.01 to 0.0025 grains, these crystals produce cramps, diarrhea and vomiting, with paralysis of the

musculo-cutaneous nerves and great physical prostration, while doses of from 1/10 to ½ grain caused violent convulsions resulting in death in less than 24 hours, while the autopsy revealed some of the post-mortem appearances of potassic-cyanide poisoning. Doses of 0.00001 to 0.0001 grains, on the other hand, appear to act as a powerful musculo-cutaneous neural stimulant, causing in the healthy subject, anesthetic areas, ulcers and crops of papillæ, but in the ailing subject inducing rapid granulation of indolent ulcers, converting pus and sanious exudates into serous discharges which rapidly lessened and disappeared, retarding the development and movement of tubercle bacilli, increasing the number of red blood-corpuscles and apparently stimulating the leucocytes to increased energy. He sent details concerning this to various journals, but had difficulty in obtaining recognition, and finally experimented with it on a man with the result of producing a perfect cure in his first case. He then sent packets of the drug to various relatives and medical friends and claims that of 256 cases treated with it every one made a recovery. He then treated twelve cases before a test committee of physicians and others, with a cure in each case. He says, having made no secret of his plans, he does not see why it has not received attention from the medical profession, nor had its merits appreciated.

51. **Simulated Mental and Nervous Diseases.**—Bell discusses the subject of simulation and its frequency, which he thinks is common in prisons but not so common in general practice, especially under the observation of neurologists. The person who attempts to feign insanity has a difficult task. There is practically only one form not easily detected, that is, the dumb or speechless type. The feigning of health is common however, in asylums, with the idea of being released. There are some symptoms that are almost impossible to feign, such as loss of sensation or consciousness, and the simulator must, it is to be remembered, be fully as familiar with the symptoms he imitates as is the physician he attempts to deceive.

53. **Determination of Sex.**—Dunsmoor's paper discusses the various theories of production of sex, the author himself announcing his belief in the Thury theory, that the degree of ripeness of the ovum is the natural factor in the determination of the sex of the animal produced. His article contains a number of communications from physicians, stock-breeders and others as to their experience and observations.

55. **Diet in Typhoid Fever.**—According to Abbott, the present accepted ideas as to diet in typhoid need some change. A milk diet is open to certain objections and does not agree with every individual even when sick. It has been his practice for years to give his typhoid patients what might be called a soft diet, consisting of milk when it is agreeable, buttermilk, all kinds of soups and broths, raw and soft eggs, and the yolks of hard boiled eggs. As regards the use of fruits, in his section constipation is rather more common than diarrhea and he does not prohibit stewed or baked apples, the pulp of grapes, the juice of oranges, and even bananas if properly ripened and sound. In regard to the intervals of feeding, he believes in longer intervals of 2, 3 or 4 hours or even more. Alcohol in fever he thinks is not only unnecessary but often injurious and he does not encourage its use.

57. **Malaria in Children.**—Moncorvo continues his description of malaria in children as observed by him in Brazil. He discusses the mosquito theory and believes that his experience confirms it. He has never been able to observe any of the alleged antagonism between tuberculosis and malaria but finds that the two conditions react upon each other to a serious extent. In fact phthisis, like other dystrophic diseases, increases the predisposition. He reviews the symptoms in these cases and finds that they do not indicate that diet is at all at fault. Hypertrophy of the spleen is absent in many cases of infantile malaria, but its situation and the difficulty of its examination make this symptom more difficult and less valuable than in adults. The article is to be continued.

60. **Infant-Feeding.**—Leavell's paper reviews the subject of infant-feeding at length, showing the modification that cow's milk requires to make it a proper food for infants, and he favors the establishment of milk laboratories in cities which will provide to the consumer milk prepared by any prescribed formula. Regularity in feeding is of the utmost importance and he gives the periods and intervals at the different ages. The temperature of the milk should be about 99; it should be kept free from germs by Pasteurizing or boiling. The only accurate way to determine whether or not the child is thriving is by weight. An infant should gain at least four ounces a week for several months. If it shows no evidence of indigestion and does not gain in weight, the quantity of food should be increased. It is by watching this symptom of weight that we are often able to prevent serious nutritive disorders before they reveal themselves in other ways.

61. **Cholera Infantum.**—Brown discusses the subject of animal toxins and suggests the question whether these products may not be the original factors in the causation of cholera infantum.

62. **Gall-Stones.**—After noticing the symptoms of gall-stones and the course of the disease if untreated, Simpson states the following indications for immediate operative interference: 1. Any case of hepatic colic in which a tumor of the gall-bladder can be made out. 2. Persistent jaundice with pain, even at the risk of finding a cancer. 3. Recurrent biliary colic. 4. Biliary colic followed by persistent jaundice. 5. Colic with prolonged rise of temperature and high pulse. 6. Obstruction of the common duct evidenced by jaundice and acholic stools. 7. Obstruction of the bowel and peritoneum. 8. Empyema of the gall-bladder and liver abscess. A state of cholemia does not contraindicate the operation. He describes the method of Bernays of performing cholecystotomy, which he considers preferable and adopts in his practice. He says also the combined longitudinal and oblique incision is the best in case a choledochotomy or cholecyst-duodenostomy has to be performed, when stricture of the common duct has been found. In the latter operation the incision into the duodenum must be twice the size of that in the fundus of the gall-bladder, or the contents of the former will enter the latter and lead to trouble.

66. **The Relations of the Coroner to the Undertaker.**—This paper, delivered before an undertakers' association, is one that is certainly of interest to the average physician. The author brings out various points in regard to the cause of death, medicolegal expert testimony, and appeals to the undertakers to give more attention to the phenomena they observe between death and burial, as they have it in their power to add materially to our knowledge of cadaveric changes.

71. **Conditions Leading to Fibroid Changes.**—The subject of Anderson's article is the fibrosis that occurs usually with old age, which while efficient in producing pathologic symptoms may almost be called physiologic, and its premature appearance. He notices especially the conditions in the circulatory apparatus, the kidneys, liver, etc. The etiology is obscure. Heredity seems to have its influence. Syphilis, gout, rheumatism and infectious diseases are also causative. Among the theories that have been advanced, the uric acid and toxin theories are most popular but none fully explain the condition. As regards treatment, the most important are regulation of diet, mode of life and hygienic surroundings. Those who have lived high should be restricted, and alcoholic beverages, excessive work, irregular hours and worry must be avoided. Exercise must be governed by the condition of the heart muscles. A moderately warm equable climate and out-of-door life are favorable conditions for patients of this class. Among drugs, potassium iodid, arsenic and phosphorus are mentioned. The condition of the heart will be met best by the special remedies indicated.

72. **Appendicitis.**—Joy reports a case of a young man in whom the persistent pain was in the region of the right kidney except at the beginning of the attack, and the diagnosis could not be made until septic symptoms appeared. Then, on the presumption that they had to do with kidney abscess, an incision was made for lumbar nephrectomy, but the finding was a retroperitoneal appendix abscess. A second operation was required three weeks later, after which the patient did well.

74. **Ear Disease.**—Strangways objects to the frequent use of syringes and believes that the value of peroxid of hydrogen in aural troubles is greatly overestimated. To cleanse the ear he uses the head mirror and aural speculum, applicators, aural forceps, and occasionally, Anel's lachrymal syringe with a long end piece. He speaks favorably of the use of tincture of iodin in inflammatory diseases of the aural canal, also of compound tincture of benzoin. Cleanliness stands first as a remedy and, in his estimation, compound tincture of benzoin next.

75. **Overcrowding in the Profession.**—Sherman's paper is a radical argument for single tax and government ownership of land as a cure of evils of overcrowding in the medical profession.

80. **Matrimony.**—Aronstam advocates government regulation of marriage and examination of all candidates as to physiologic condition and family history.

82.—See abstract in JOURNAL, May 20, p. 1113.

83.—Ibid, p. 1112.

84.—Ibid.

85.—Ibid.

87.—Ibid, September 9, p. 670.

88. **Cerebrospinal Meningitis.**—Irwin discusses the literature of three epidemics of cerebrospinal meningitis that have occurred in Louisville since 1874, and gives an account of the symptoms and treatment. The later epidemics have presented no new features.

89. **Treatment of Tuberculosis.**—Flick believes that tuberculosis can now be considered a curable disease. The fundamental principle in the treatment is immunity and the chief means at our command for attaining this are: 1, nutrition; 2, drugs; and 3, antitoxin. Nutrition must be assigned first place and combines forced feeding and artificial digestion, rest, exercise and climate. By forced feeding is meant the taking in of a large quantity of easily digested and readily assimilated food, and in connection with this the liver, kidneys and intestines must not be unattended to. Oxidation is also important and a liberal air-supply is as essential as food. Life in the open air should be pursued as far as possible. Rebreathed air should be avoided. No matter where the air comes from let the patient have plenty of it. Outdoor life, however, must not be interpreted as constant exercise, overexertion being dangerous. Exercise should be graduated according to the patients' powers and improvement. Climate is reckoned as less valuable now than was formerly the case, and better results can be obtained at home as a rule than in any other place except a well-ordered sanatorium. As regards drugs, he believes that much can be done with them. He has found iodin the most valuable remedy, in the form of europhen. The formula that he employs is europhen 1 dram, oil of rose 1 minim, oil of anise 1 dram, and olive-oil 2½ ounces. Of this he has the patient rub from a teaspoonful to a tablespoonful into the arm-pits and inside of the thighs once or twice a day. As tolerance increases, he sometimes gives europhen by the mouth in addition. This treatment should be kept up for a long time. The next most valuable drug is creosote, and in case the disease has passed to the stage of breaking down, he gives creosote in addition to europhen treatment. Large doses should be given. He begins with one drop and increases it regularly until the patient takes from 40 to 50 drops a day in hot water. The third place is assigned to strychnin, changing the dose from time to time. Other drugs are mentioned, such as arsenic, calomel, ammonia, nitroglycerin, etc. Antitoxin is yet on trial, and he employs as a modification of it, which has given good results, the use of a fly blister, causing a large vesicle and allows it to reabsorb. The symptoms from this treatment are much those as described after the injection of tuberculin, and he thinks he has seen benefit in this method.

90. **Empyema from a Surgical Standpoint.**—In this article Munro discusses the subject of anesthesia in empyema, believing that ether is generally a safe agent. As regards expansion of the lungs, he thinks an early operation is necessary to prevent consolidation. The deaths in his cases have come either from dislodgement of an embolus; from the relapse or extension of pneumonia; and in the streptococcic cases from a rapid general infection. He describes his technic, making, as a rule, resection of a rib, generally the seventh or eighth, at which level the cavity is usually as well drained as anywhere and the danger of injuring the diaphragm is avoided. He thinks that the anterior or midaxillary line is as advantageous for the incision as one farther back. The drainage-tube should be short and should not project beyond the inner surface of the chest. When a suitable operating-table is at hand, the operation may be done with the patient partially sitting up, the arm on the affected side being held over the head. This allows free respiration and free access to all but the most remote posterior parts of the chest. After operation, patients improve more rapidly if they are allowed to sit up as soon as they can safely do so. Systematic exercises, etc., are valuable in expanding the lungs.

93. **The Specific Cause of Yellow Fever.**—Reed and Carroll, in this article, reply to Sanarelli's recent communication. They resent his charge that they have made mistakes and mixed their cultures and state that the culture used was obtained from Pasteur's laboratory where it was opened by Dr. Roux, and bore the label of the Laboratory of Hygiene, University of Montevideo. It was from this that their subsequent colonies were made and their experiments performed. They traverse many of Sanarelli's criticisms of their work, showing that the difference claimed of the growth on potato of the hog-cholera and Sanarelli's bacillus is not as he states, that the bacillus icteroides does not always grow on potatoes as a colorless, scarcely visible growth, as Sanarelli says, but may show various methods of growth, and they propose to show that his statement as to the supposed effect of certain temperatures on the hog-cholera bacillus is entitled to no credence, and refer him to the literature. They believe that Dr. Selander has never plated on gelatin the genuine hog-cholera bacillus as known in this country. They also point out that Sanarelli, in emphasizing the specific character of the necroses in the liver of guinea-pigs and rabbits, shows a surprisingly limited knowledge of the work that has been done in this line. As regards his criticisms that Reed and Carroll failed to produce acute steatosis of the liver in dogs with his bacillus, they publish a table of the observations by Sanarelli, by themselves, and by De Lacerdo and Ramos, showing that while the former has more such results than they, the latter observers have even less and the statement that they themselves failed to do so is incorrect. Concerning Sanarelli's criticism as to the resistance of the yellow-fever germ to cold, Reed and Carroll say that they never questioned the vitality of the bacillus, but its effect as the specific germ of yellow fever, and they will leave to Dr. Novy the easy task of answering this part of Sanarelli's article. The paper concludes with the account of their experiments in feeding bacillus icteroides to young hogs, and they believe that they justify them in expressing the opinion that it is a variety of the hog-cholera bacillus.

94. **Cardioesophageal Gush and Click.**—Curtin here describes two symptoms, the description of which he has not heretofore found in the literature. The first patient complained of being troubled with a queer noise which the doctor could hear without applying the ear to the chest. The sound occurred before or early in the systole and was loudest when the patient's mouth was open. It appeared like a short gush of air from the throat, modified by the upper air-passages, giving it a low pitched grunting sound. It continued while she was talking and breathing, and apparently had no connection with the stomach. It was relieved by potassium bromid and nux vomica. A second case was also observed. The sound was diagnosticated as of endocardial origin. The patients all had organic heart disease with enlarged organ. He explains the sound by the heart in diastole pressing out of the esophagus a small amount of air, which was readmitted during the contraction or systole of the organ. He also describes what he calls "esophageal clicking," which has similar peculiarities and which is faucial in its origin and was explained by him as caused by the separation of two moist surfaces. As it keeps time with the heart, it is evidently of cardiac origin. He recapitulates as follows: 1. The sounds were heard at the beginning of the systole of the heart and, in two cases, diagnosticated as an endocardial murmur. 2. The sounds of both were modified by respiration, being heard most markedly at the end of expiration. 3. They were all more or less evanescent, except in the case of the old soldier. 4. They were increased or developed by a full stomach, stimulants or excitement. 5. The sounds were increased by opening the mouth, and dulled by closing it. 6. They were heard by auscultation at the middle of the sternum, but very much subdued as compared with the sound heard at the open mouth. 7. The sound was not transmitted in any direction from mid-sternum. 8. They were not heard by auscultation over the stomach.

95. **Hydriatic Treatment of Pneumonia.**—Macalester, after noticing the general effects of hydriatic applications, their pathologic action on the nerve-centers and their prophy-

lactic power against heart failure, describes his method in applying water treatment in pneumonia. He finds the chest compress the best application and describes it as follows: "The chest compress is composed of three folds of linen or old muslin cut in a manner to fit the entire chest, from above the clavicles down to the umbilicus, with slits in the axillary regions to form flaps and cover the shoulders. It is then wrung out of water, so that it does not drip, at a temperature of 60 F., snugly applied around the thorax, covered with a piece of closely woven, thin flannel of the same shape but at least an inch wider in all directions, and secured by safety-pins. At first the compress is changed every half hour, then every hour or two, until the patient's temperature is below 100, when it may be discontinued. The compress should not be covered with oiled silk, a very popular proceeding on the part of attendants for the sake of convenience and protection of the patient's bed and clothing, as this would convert it into a poultice and deprive it of its stimulating and gradually cooling action."

97. **Fracture of the Lower End of the Radius.**—Noticing first the erroneous views in regard to Colles' fracture, Beck remarks that the anatomic aspects of this lesion differ more than those of any other fracture and that the Röntgen rays reveal to us of late years more in regard to it than ever could have been known before. In classifying the different varieties he distinguishes epiphyseal separation, fissures (infraction), complete fractures, incomplete fractures, fractures of the lower end of the radius combined with infraction or fracture of the head of the ulna, and fracture of the lower end of the radius combined with fracture of the styloid process of the ulna. All these different varieties may be extra-articular and intra-articular. Epiphyseal separation shows the same symptoms and is to be treated on the same principles as complete fracture. In very young children there are real chondroepiphyseal separations, while later at the age of between 14 and 17 osteoepiphyseal separation is observed, the fracture line extending to the diaphysis. Fissures are extra-articular as well as intra-articular and are far more frequent than was supposed before the use of the X-rays. There being no displacement, no reduction is required, and this shows why the results in these cases are nearly always good. Adhesions, however, may be formed in the joint too long immobilized. Beck treats these with a wire splint slightly bent downward, applied at the flexor side of the arm, where it reaches from the tips of the fingers to the elbow, the downward bent portion being attached to the palm of the hand. After three or four days, when the swelling has subsided, this long splint is removed and a bracelet consisting of a piece of mossboard about four inches wide is substituted. It fixes the wrist sufficiently and permits motion enough to prevent adhesions. The patient carries his hand in a sling in such a manner that the ulnar margin rests on it. Movement of the fingers is advised. Complete fracture is divided into intra-articular and extra-articular, the first being the most important. It can only be certainly determined by the X-ray. The extra-articular complete type is the best known, the typical Colles' fracture. The deformity is characteristic. Abnormal mobility and crepitus is always present except in case of impaction of the epiphyseal end into the upper end of the radius. Local pain is generally severe. The paper is to be continued, and will be further noticed with its next issue.

98. **A Test Case for Taste.**—Beers gives an account of a newly devised case for testing the sense of taste by colorless solutions in the contained bottles and gives directions for use.

99. **Adenocarcinoma of the Nose.**—Newcomb reports a case of adenocarcinoma of the nose, and has collected four others in the literature to be added to a table prepared by Dr. Hopkins two years ago. He adds simply a paragraph as to the surgical treatment. "Up to the present time two general operative plans have been followed: First, removal of the superior maxilla with more or less of the surrounding structures, and, second, attempted starvation of the growth by shutting off its blood-supply. In pursuance of the latter end the external carotid has been ligated. I have been interested to learn of a modification of this procedure, first made, I believe, by Dr. R. H. M. Dawbarn, a well known surgeon and anatomist of New York. He found, upon studying the anastomotic circulation, that after simple ligation of the external carotid there were fully twenty channels through which collateral circulation could be established. With a view, therefore, of still further cutting off the blood-supply, he conceived the idea of ligating, one after another, the eight branches of the external carotid, and then, as the trunk of the vessel was thus rendered useless, of resecting it entire. He has done this operation sixteen times on eight patients, a two-weeks interval elapsing between the two operations in each case. It has been done once or twice by others. While the period covered by this work is too short and the number of cases thus operated on too few to allow of decisive conclusions, he believes that time will demonstrate the logic and effectiveness of this operative modification."

101. **Synechiotomy of the Stapes.**—By the term "synechiotomy" Dench means the division of adhesions about the stapes, which usually lie between the posterior crus of the ossicle and the corresponding wall of the oval niche, but occasionally occur superiorly and anteriorly. He says:

"The operative technique is comparatively simple. The procedure can easily be conducted under cocain anesthesia, or, if this is found to produce unpleasant constitutional effects, a solution of eucain B may be used. As this latter drug causes a hyperemia of the tissues, its application should be followed by that of a sterilized solution of suprarenal extract. This latter application will sufficiently control the engorgement caused by the eucain to assure the operator a clear view of the field of operation. Prior to any operative procedure of this character the parts should be sterilized by thoroughly mopping out the canal and tympanum with an alcoholic solution of bichlorid of mercury, of a strength of 1 to 3000. After the field of operation has been properly prepared, the first step is to divide any adhesions which may lie between the posterior crus of the stapes and the adjacent wall of the oval niche. If a fragment of the drum membrane remains and prevents a clear view of the stapes, it is better to excise this as a primary procedure. In certain cases, owing to the position of the stapes, the ossicle can not be seen. This is particularly true where posterior adhesions are present, the ossicle being drawn backward behind the tympanic ring. Knowing the normal position of the stapes, it is a comparatively simple matter, after local anesthesia has been thoroughly established, to divide these adhesions, although the ossicle itself may be completely hidden from view. In order to do this a sharp-pointed knife is introduced into the middle ear in the upper and posterior quadrant, close to the tympanic ring. The knife is carried inward until the bony wall of the tympanum is encountered. It is then swept downward, the point being still kept in contact with the internal tympanic wall. In this way all adhesions lying between the posterior crus of the stapes and the adjacent wall of the oval niche are divided, including the tendon of the stapedius muscle. Not infrequently, where the stapes is invisible before the procedure, it is easily seen after the incision has been made, owing to the division of the adhesions which have drawn the ossicle upward and backward. The operation itself, if carefully conducted, is absolutely painless.

Prior to the operation a careful functional examination should be made, and this should be repeated after each successive step, so as to note the effect on the lower tone limit and on the power of audition. It is not uncommon to find a marked improvement in hearing after a simple division of posterior adhesions. If this does not follow, the operator should next pass the knife beneath the crura of the stapes and the adjacent wall of the niche. Careful mobilization of the ossicle by means of the cotton-tipped probe is also advisable, both the hearing and the lower tone limit being tested from time to time to see what improvement follows the procedure."

He has records of 26 cases thus operated on, with improvement of hearing in 25. In many instances the effect on the opposite ear has been exceedingly marked, the hearing not only being improved, but the subjective noises often relieved and incipient inflammation of either the labyrinth or the middle ear effectually prevented.

The after-treatment is exceedingly simple. If the field of operation has been properly sterilized, it is only necessary to occlude the meatus with a pledget of sterilized cotton. This should be changed daily, and at the same time the meatus wiped out with a pledget of sterilized cotton. Frequently there may be a serosanguinolent discharge from the ear for from three to four days after the operation; at the end of this time the tym-

panum becomes dry. He usually directs the patient to keep the meatus occluded while in the open air for at least ten days after the procedure. At the end of four or five days, if there is no discharge, the ear may be left open while the patient is in the house, a cotton pledget being inserted when the patient is in the open air or in a dusty place.

102. **Bovine and Human Tuberculosis.**—In this article, which was commenced in a previous number, Moore questions the prevalent view as to the transmission of bovine tuberculosis to the human species. After having gone over the subject of the prevalence of tuberculosis in herds and the methods adopted to stamp it out, he discusses the question of the relation of the disease germ in the two species, the bovine and the human. He questions the possibility of bovine tuberculosis being transmitted to man and points out certain differences in the organisms. Man is omnivorous, cattle are herbivorous. The normal human pulse is 72, that of the ox, 40 or 45. The normal temperature is 98.6, that of cattle from 100 to 100.5. He believes that there is something in the human body antagonistic to the germs of the ox, and vice versa. He calls attention to a similar state of affairs in other species. Glanders kills field mice but not house mice, while the reverse is the case with mouse septicemia. The bacillus of tuberculosis in man he believes practically specific to him and the same is true of cattle, and the environment being changed, the pathogenic power is lost. In all his experience with cattle tuberculosis he has never met with a case of transmission to man, and he believes that reported cases have been incorrectly interpreted. As regards the transmission of human tuberculosis to cattle, the case is equally strong. There is no instance that he can find where the infection of the disease in man has passed to the animal. The herd at the Saranac Lake Sanatorium, which was exposed if any could be, was found free from tuberculosis. He quotes Theobald Smith as reporting similar views in regard to this subject, and maintains that a few statements like that of Sternberg in his "Manual," and others, have scared us into believing that bovine tuberculosis is a human danger. He finishes his article with a number of letters from various parties supporting his views.

103. **Etiology of Tuberculosis.**—The chief point made in Girsdansky's paper is the danger of tuberculosis infection from sweeping. The broom is, in his opinion, the chief and most serious danger to man. While infection may occur by other routes, that by inhalation is by far the most frequent. He says:

"If 60 per cent. of all men die of pulmonary tuberculosis (Biggs)—if the main, almost the only, cause of pulmonary tuberculosis is bacilli-laden dust, and the broom by far the main cause for such dust, the broom is evidently responsible for more deaths than the sword ever was.

"The inevitable consequences of the above are: 1. That the broom, far from serving any hygienic purpose, is the cause of the maintenance of organic dust in the atmosphere of the large cities of the world, and as such is the most important cause of the existnece and spread of tuberculosis, probably also of various other infectious diseases, and should therefore be abolished. 2. That the carpet is an unhygienic article serving as a fine breeding-ground for vegetable parasites, necessitating the use of the broom and the duster, and thereby becoming a reason for existence and spread of tuberculosis, probably also of various other infectious diseases, and should therefore be abolished. 2. That the carpet is an unhygienic article serving as a fine breeding-ground for vegetable parasites, necessitating the use of the broom and the duster, and thereby becoming a reason for the existence of organic dust. 3. That the only proper and safe way of procuring cleanliness of the floors and streets of our large cities is by the free use of water as a cleansing agent in the shape of showers, sprinking wagons, hose, mops etc. 4. That all floors and floor coverings of the home and the street ought to be so constructed as to facilitate the free use of water in the shape of shower or mop to produce cleanliness.

104. **Tetanus Treated with Carbolic Acid.**—Woods reports the only case of tetanus he has seen recover, the patient treated by hypodermic injections of 10 per cent. solution of carbolic acid every half hour until he was able to swallow, except when he was quiet in the night. When he became able to swallow a dram of the solution in glycerin was administered every three hours until the spasms ceased, and after that a dram three times a day, gradually diminished to one-half dram until all rigidity had disappeared. He appends the report of a case of tetanus in a horse similarly treated, with like results.

105. **Reflex Irritation and Eye-Strain.**—Drew's paper calls attention to the importance of reflex irritation from eye-strain in the production of mental disorders. He advocates the views promulgated by Stevens, Ranney and others in this regard.

106. **Inoculation of Scarlet Fever.**—This paper contains the report of 10 cases of children inoculated with scarlet fever with mucus obtained from the throat and buccal cavity of a mild case of scarlet fever, after the eruption had appeared. The inoculations were originally made, it is stated in a foot-note, to prove that a protective virus had been discovered, but it was found that genuine scarlet fever was produced. The following are the author's conclusions: 1. The mucus of the throat and mouth has been shown with absolute certainty to contain the contagion of the disease. 2. The early eruptive stage of scarlatina is exceedingly infectious because of the presence in the discharges from the mouth and throat of the special poison of the disease. 3. The contagion of the disease being in the mouth and throat secretions, care should be taken, not only to disinfect these parts as thoroughly as possible, but to keep the tongue, mouth and lips moist constantly, if possible, in order to prevent the contagious principle being forced into the air of the room by the exhalations of the patient. 4. Mouth and nose wipes should be used instead of spit-cups and costly handkerchiefs and they should be destroyed by fire before the discharges on them dry, i. e., at once. If fire be not available, disinfecting solutions should be used strong enough to render the poison inert. 5. The soiling of the bed-clothing and personal apparel with mouth discharges should be prevented if possible. In the event of such contamination, they should be disinfected as soon as possible. 6. No toys or implements of any sort that can not be boiled or subjected to the strongest germicidal solutions should be given the patient, as they are apt to become soiled by the mouth secretions. 7. Those who minister at the bedside should be especially careful as to personal contamination and disinfection from the moment they enter the room. 8. The nostrils should be taken thorough care of, as the morbific matter which finds its way into these parts will, in the dry state, easily find its way into the atmosphere of the room, thus making the spread of the disease more probable.

112. This is an abstract of a paper read before the American Gynecological Society, May 22, 1899.

113. **Dysphonia.**—Christy describes dysphonia as the result of any interference with normal respiration and phonation, and it may be accompanied by either pain or cough or both. It is: 1. Due to any interference with physiologic functions of the glottis and true cords, generally from inflammatory causes. 2. Not always in direct relationship with the intensity of the inflammation. 3. Not always present in inflammatory affections. 4. Not always associated with the constitutional diseases, presence of growths, etc. 5. Found occasionally with that rare constitutional condition (mentioned by Morell Mackenzie), a chronic inflammation of the mucous canals. 6. Found in cases of trachoma of the true cords known as singer's nodes. 7. Found in cases of lithemic throat, also in gouty and rheumatic conditions. 8. Found in cases of enervation of the larynx from general debility or localized paresis. 9. Frequently present during the period of pregnancy. 10. Causal relations not always determined by local inspection of the parts. 11. One vocal cord only may be normal, its companion useless. 12. Pain may or may not be a symptomatic feature. 13. Mild forms of dysphonia are occasionally due to gastric conditions. 14. Stenosis of larynx; pathologic changes found in subglottic space; chronic use of tobacco and alcoholics. 15. Caused by an elongated uvula. After noticing the anatomy of the vocal organs, he gives the results of his treatment of this condition with the constant electric current, reporting four cases. His conclusions are that the galvanic current, as a curative agent in laryngeal and tracheal affection, *a*, is easy of application; *b*, is soothing and agreeable to the patient; *c*, relieves the congestion, pain and irritation; *d*, does not excite pain or spasm of the glottis or trachea; *e*, relieves the swollen lymphatic glands; *f*, cures more promptly than any other agent; *g*, patients recognize its value and return regularly for its application.

115. See JOURNAL, June 24, 1899, p. 1443, for abstract of this article with discussion.

118. **Effects of Training.**—Darling's paper is concluded from a previous number, and he finds that the physiologic effects of training, on the heart and kidneys in particular, may approach unpleasantly near to pathologic conditions, and there should be some competent supervisor to see that the safe limits, when they are ascertained, are not passed. He thinks that it is well to suggest that too much work is not thrown on the muscles, especially on the heart, until they are strengthened by preliminary work, and to watch the nutrition carefully and to avoid nervous fatigue by providing a variety of exercise and not confining the attention too closely to the approaching contest.

120. **Staphylococcus Infection.**—The first part of this paper reviews the opinions in regard to certain skin diseases and concludes with investigations by the author, by inoculation and examinations, and with some remarks on impetigo contagiosa from a clinical standpoint. The author's results support strikingly the theory of staphylococcus pustular skin affections.

121. **Multiple Vulvar Ulcers in Typhoid.**—After remarking that vulvar ulceration of the kind described in the two cases reported are new to literature, Lartigau reports two cases of typhoid fever in which multiple ulcers occurred in the vulva and vagina, in one of which a bacteriologic study of this lesion produced a pure culture of typhoid, the bacillus reacting to all the tests. The second case was similar, but there were no bacteriologic studies made.

122. **Appendicitis.**—Harrison concludes that in all mild cases without severe complications the use of an ounce of prevention rather than a pound of cure is advisable, and operation is recommended as soon as the diagnosis is complete. In the fulminating variety of appendicitis all will agree as to the advantage of the early operation. In those cases seen late, where there is suppurative peritonitis without collapse, the patient is entitled to the very small chance offered by the operation after he has been advised as to the gravity of the situation.

123. **Does the Practice of Medicine Pay?**—After reviewing the facts as they appear to him, the overcrowding of the profession, the multiplicity of medical colleges, etc., Monroe concludes that it does not pay, financially, to be a physician.

126. **Ligation of the Dorsal Vein of the Penis.**—Broome reports six cases of ligation of the vena dorsalis penis for functional impotence, with good results. He thinks that in properly selected cases this operation has its advantages, while it would be unavailing in neurasthenic cases with relaxed organs and very little sexual impulse.

FOREIGN.

Lancet, August 26.

Some Details in the Treatment of Acute Intussusception in Infants. H. STANSFIELD COLLIER, F.R.C.S.—The author recommends the method of treating intussusception in infants by injections with water or air, and on location of the tumor, the reduction of the bowel through a very small incision. He thinks that while injection alone is inefficient and large incision is perilous in infants, by this method there is less shock and danger. He reports three cases, briefly.

Cases of Amenorrhea Associated with Raynaud's Disease and Pulmonary Tuberculosis. JOHN W. BYERS.—Byers has met with a series of cases within the past ten years characterized by: 1, arrested or diminished menstruation; 2, local symmetrical asphyxia of the extremities—especially of the arms and hands (Raynaud's disease); and 3, pulmonary tuberculosis. He gives details of four cases, and discusses the relation of these symptoms. The association of tuberculosis with Raynaud's disease is apparently a new fact.

Acquired Oblique Inguinal Hernia; 150 Consecutive Cases of Radical Cure; One Death and Two Recurrences; A New Operation. JOHN O'CONNOR.—The author, finding that orchitis followed Halsted's operation in 80 per cent. of his cases, and was frequently also met with after Bassini's operation, has devised the following method, which, in the fifteen cases in which he has used it, has been followed by no relapses or serious complications.

"A three-inch incision is made, commencing at a point half an inch internal to the anterior superior pubic spine, and is carried inward and downward to a point one inch above Poupart's ligament. The external oblique, internal oblique, and transversalis muscles are opened by separation of their fibers, as in McBurney's appendicectomy. The funnel-shaped process of the peritoneum is then sought for and a finger is passed behind it in order to differentiate the cord, and with a little dissection the latter is freely separated from the former. The funnel is incised and the intestine and the omentum are pushed upward into the abdomen by a sponge inserted through the wound. If any bowel or omentum be found adherent in situ the complication is easily dealt with, but if such adhesions should have formed low down in the sac upward traction is made on the latter until the testis reaches the external ring, and the portion of sac thus exposed is divided from above downward on its anterior aspect. By this maneuver the majority of low adhesions can be easily brought into view. In cases of old adherent sacs upward traction might be useless, and then nothing would remain but to open the canal from above downward. In none of my 15 cases have I had occasion to do this. In two cases where there were low omental adhesions I doubly ligated the omentum, divided between, and allowed the distal segment to drop back and remain in the sac, and no ill effect followed. The sac is next ligated below the funnel and divided on the proximal side of the ligature, and the distal portion is dropped back into the inguinal canal and there it remains. It may act as filling material for the canal—not that I think any such is required, but that I do not consider it expedient to divide muscular fibers for the sake of removing it. In cases of bubonocele the small sac may be removed with facility. The funnel-shaped process of the peritoneum is then completely snipped away at its base—i. e., at the level of the normal parietal peritoneum. A large gap is left; pressure forceps are applied, and the cut edges of the peritoneum are drawn down and are united by a continuous catgut suture. Having removed the funnel, the opening in the transversalis fascia appears as little like a ring as anything that can be well imagined. I have frequently been struck with the large size of this hole and have wondered how it was that yards instead of inches of bowel had not escaped through it, particularly if the great amount of intra-abdominal pressure which must be constantly concentrated on this point be thought of. Doubtless the oblique muscles save the situation and this in itself is a strong reason for objecting to operations in which these protective muscular fibers are ruthlessly divided. No muscle is strengthened by having a transverse cicatrix formed in it and, moreover, I am very dubious as to the durability of any cicatrical tissue barrier. The edges of the transversalis fascia are next caught by forceps and are drawn well into the field of operation; from four to six silkworm gut sutures are then passed through the external oblique and transversalis muscles and the fascial pillars and are brought out in the reverse order on the opposite side. Care is taken to leave room for the cord to pass into the canal without compression. The edges of the deep wound are now firmly appproximated, the sutures are tied, and the ends are cut off. The wounds in the external oblique and the skin are united by separate continuous catgut sutures.

"In none of the cases treated by this method has orchitis supervened and no recurrence has so far taken place. I may here mention that I never order a truss to be worn after an operation for radical cure. The advantages which may be claimed for this operation are: 1, the vitality or function of the testicle is not endangered; 2, there being no division of muscular fibers the natural anatomical support is not weakened; 3, the cause of the trouble only is dealt with, and all superfluous surgery is avoided; and 4, the wound is comparatively small, is further removed from the septic area, and it contains no pockets for blood or serum."

Suggestion As to Treatment of Graves' Disease by Administration of Bile by the Mouth, Hypodermically, and Intrathyroideal, with Cases. C. M. ALLAN.—In a case of Graves' disease Allan's attention was called to the absence of bile in the feces, and this suggested to him a probable paresis of the liver-cells in the disorder. Salicylate of soda and phosphate of potash, both powerful cholagogues, did not influence the secretion. This led him to give pig's bile internally, supplementing it part of the time with intrathyroideal injections of the same. The dose was eight grains of extract every four hours, equivalent to 1500 grains of bile daily, and this was

later increased to 2250 grains, with great benefit. In all the patient received 48,000 grains, 3640 of which were given hypodermically. Recovery was perfect, and there was great general improvement and gain in weight. He concludes that bile has a digestive effect on other ferments or toxins, and reports a case of a boy treated by thyroid extract, which alone seriously disagreed with him but exercised its good effects without its untoward ones, if mixed two hours before use with bile. A second case of Graves' disease thus treated with success is also briefly reported.

Diphtheritic Paralysis in Cases Treated with Antitoxin. F. J. WOOLLACOTT.—This paper contains some interesting statistics in regard to the antitoxin treatment of diphtheria and the occurrence of diphtheritic paralysis. The author says: "In conclusion, the influence of antitoxin on diphtheritic paralysis may be summarized as follows: Up to the present the percentage of paralysis has increased on the whole. There is some evidence that large doses—i. e., not less than 4000 units—of antitoxin are more effective than small ones, both in preventing paralysis and diminishing the mortality due to it. The earlier antitoxin is given in diphtheria the less likely is paralysis to follow. Should it occur after early injection it will probably be mild and of comparatively short duration. The type of paralysis has on the whole, become less severe or, at all events, less dangerous to life. Finally, diphtheritic paralysis has become more prone to attack the young. This change in age incidence has probably made some minor difference in the relative frequency with which the various forms of paralysis are observed. The practical conclusion is that the full value of antitoxin is obtained only by using it early and in efficient doses. If this be done, not only is life saved, but tedious complications are prevented, or at least deprived of their dangerous characters."

Medical Press and Circular (London), August 23.

Notes on a Case of Hematuria from Healthy Kidneys. T. MYLES.—A case is here reported of hematuria, with pain, vomiting, etc., and movable kidneys, in a nurse, aged 26. Operation on the left kidney, which appeared to be the seat of irritation, revealed no adequate cause for the hematuria, and the kidney was fixed after an X-ray examination, which was also futile. The operation was in every respect a success, but the hematuria continued, and the patient's anemia and other symptoms became serious. A nephrectomy was then made twenty-three days later, and examination of the removed organ revealed a diffuse myxangiomatous condition of the pelvic submucous tissue. Recovery was complete. The points of interest in the case were the obscurity of the pathologic condition before removal, the examination by the X-ray of the kidney outside the body before fixation in the first operation, the mode of fixation, which was by removal of perirenal fat and stripping of the capsule, and the pathologic findings, which Myles thinks are unique.

A Case Bearing on the Etiology of Rickets. CHARLES ELGOOD.—After remarking on the popular notion that rickets is due to improper feeding, Elgood reports a case that seems to point to other causes. A woman, aged 23, gave birth to an illegitimate child; the father a healthy young game-keeper. The boy has grown up healthy. In 1886 she married a farm laborer of degenerate type and of limited intelligence, who was defective in infancy, did not walk till eighteen months old, and at 8 years was considered to be in a decline. To him she bore five children, one of whom died rickety at 4, and the surviving ones all developed into marked rickets in different degrees. During most of this time the family lived in an old farmhouse in a healthy situation. In 1893 the man committed suicide, and the woman and her children moved to a cottage in a similar situation. Here, in 1896, she gave birth to another illegitimate child, so far healthy. Shortly after this she married again, and has one child, puny, but with no signs of rickets. According to her testimony, the feeding of her children has varied little, and during her first marriage her surroundings were much better than later in the cottage. Rickets is not common in the neighborhood. Elgood has seen none other of such severity as some of these. He suggests that heredity may be an important cause, but that in cities where the disorder most prevails, this is obscured by other causes: overcrowding, lack of sunlight and ventilation, etc.

Uric Acid and the Circulation: Some New Methods of Estimating Its Effects. A. HAIG.—Quoting Raynaud, that in his disease as much as thirty seconds may elapse before the skin rendered white by pressure regains its normal color, while healthy skin does so in one or two seconds, Haig, assuming Raynaud's disease to be of uric acid origin, concluded that similar time-phenomena would be observed with other uric acid states. He, therefore, has utilized the metronome in testing this capillary reflex with an instrument devised to give exact areas and degrees of pressure, and finds, he says, that it goes parallel with high blood-pressure and with the disappearance of the after, or fatigue, image in the retina, indicating the capillary circulation there. He claims that testing this capillary reflex is an index of the amount of uric acid in the blood and urine, and that the capillary circulation is controlled by uric acid.

South African Medical Journal, August.

Notes on Some Recent Cases of Plague in South Africa.—Dr. A. J. Gregory, assistant medical officer of health, Cape Colony, publishes, in the *South African Medical Journal* for August, an account of a case of plague examined by him at Middleburg, Natal. While the bacteriologic examination and inoculation experiments were not absolutely conclusive they are sufficiently so as to leave little doubt as to the nature of the disease. Other facts, such as a mortality of rats at Delagoa Bay, where the patient came from, and the occurrence of other similar cases at that place, led Dr. Gregory to conclude that plague in a mild form has existed there since early in January, and probably for some time prior to that date. The lessened severity of the disorder, as compared with that in Bombay he attributes to more favorable sanitary conditions, and the measures adopted by the authorities. Dr. Gregory's diagnosis has been agreed to by the special medical plague officer at Johannesburg, Dr. Hornabrook, who examined the microscopic specimens and cultures.

Revue Hebd. de Laryngologie, etc. (Bordeaux), August 12.

Center for Phonation. ONODI.—Study of a number of monsters and of fetuses whose skulls had been perforated, but who had used their voices, confirms the existence in man of an infracerebral center of phonation, the same as Onodi has already established for dogs, and in the same spot, that is, between the posterior quadrigeminal tubercles and the domain of the vagus.

Annales de Dermatologie (Paris), July.

Cazenave's Pemphigus Foliaceus.—LEREDDE.—The important pathologic rôle of the bone-marrow is still generally unrecognized, and osteomalacia, chronic rheumatism, dermatoses, etc., are explained by nervous disturbances or a diathesis. Leredde asserts that it is a lesion of the blood which determines certain cutaneous affections at least, and probably many more, and that the causes of the alterations in the blood are the primary causes of the dermatoses. He relates several observations showing that in pemphigus foliaceus over half the whites in the circulation are altered and abnormal in some respect. In one case, complicated with osteomalacia, the number of reds was less than normal (2,608,000); also the hemoglobin (8.50); slight increase in whites (8200); pronounced eosinophilia (27.5 per cent.), increasing and diminishing parallel to the intensity of the lesions; polynuclears less than normal (18.3 per cent.); mononuclears and lymphocytes (45.8 per cent.) He states that the blood differs from normal in the same way in Duhring's dermatosis, and the cutaneous lesions in each also belong to the same class, showing an exaggerated production of serum and an important diapedesis of eosinophilous cells and their elimination through the skin. He concludes with the statement that our present knowledge in respect to "drug eruptions," induced by agents which are not toxic except for a limited number of subjects—mentioning instances of Duhring's dermatosis induced by potassium iodid—throws light on the sensibility of the organism, and indicates that the origin of this sensibility should be sought in the blood-forming organs rather than in the nerves. The persistence of the lesions after the elimination of the medicinal agent should be attributed to a persisting reaction on the part of the hematopoietic organs rather than to a nervous reaction. These lesions persisting in the blood may engender a series of dermatoses, such as pemphigus foliaceus or vegetans or dermatitis exfoliacea.

Treatment of Leprosy with Chaulmugra Oil. TORTOULIS-BEY.—The prompt and remarkable benefit derived from subcutaneous injections of 5 grains of chaulmugra oil impels our Cairo confrère to publish a case in detail. The leprosy was severe and of fifteen years' standing. The improvement was evident after fifty injections (1894), and the disease continued retrogressing until for three years the subject has presented no evidences of the disease and has been appointed vice-consul and representative of a large bank. He had received 551 injections by the end of 1898, and 33 since; a total of 2720 grams of the oil. It was injected into the arm or leg; very slight and transient pain. All swelling subsides within twenty-four hours.

Archiv. f. Exp. Pathologie (Leipsic), xlii, 6.

Remedies to Arrest Hemorrhage. F. PICK.—In a series of experiments blood was allowed to flow from an opening in a femoral, mesenteric or jugular vein, and various drugs tested in respect to their power to control the flow. Ergotin was found entirely destitute of hemostatic properties, while hydrastinin and atropin proved effectual in diminishing the flow. Suprarenal extract produced the same effect, although it increased the blood-pressure.

Centralblatt f. Chirurgie (Leipsic), August 19.

New Methods of Treating Wounds. C. L. SCHLEICH.—Scrubbing and chemical disinfection are rejected entirely, Schleich claiming that his soap made of stearin, wax and marble dust, with which the hands and region are washed, accomplishes the purpose of coating the skin with a microscopic, aseptic wax covering, or glove for the hands, insoluble in serum and other organic fluids. The soap removes all grease and flakes of epidermis, and the hands can thus be sterilized as often as desired during the day at a trifling expense and without waste of time. His control-tests have been remarkably favorable, and the cosmetic advantages of the soap have already been confirmed by others. He disapproves of catgut, and keeps his silk in nutrient gelatin. He dresses wounds with "homogeneous" substances, preparations of gelatin, peptone and serum, on account of their fibrinolytic, etc., properties. His work describing his theories, methods and results in full has just been published at Berlin. (J. Springer, 378 pages.)

Muenchener Medicinische Wochenschrift, August 15 and 22.

Function of the Thyroid Gland. A. OSWALD.—All the iodin-containing substances in the thyroid gland pass into the extract when extracted with physiologic salt solution, and Oswald has found that these substances are albuminoids, and that the extract after the albuminoids have been removed no longer contains any iodin. He has also succeeded in isolating from the aqueous organ extract (with ammonium sulphate) two distinct albuminoids, one resembling globulin, but precipitated by acetic acid although dissolving again with an excess. This he calls "thyreoglobulin." It contains 1.6 per cent. iodin, and is much more abundant than the other albuminoid, which he finds contains phosphorus but no iodin, and is essentially a nucleoproteid. He found by numerous tests (pigs) that the entire specific effect of the thyroid on the metabolism is due exclusively to the thyreoglobulin; also that the colloid substance is merely a combination of these albuminoids, thyreoglobulin and the nucleoproteid, and hence that the colloid is the effective element of the gland, and is in fact its "specific secretion." The thyreoglobulin probably gives up its iodin when it has accomplished its purpose, and the iodin circulating in the blood is in turn retained by the thyroid to make new thyreoglobulin. The next question to be decided is whether the function of the thyroid gland is restricted to the elaboration of thyreoglobulin, and experiments are now in order to determine this. Oswald warns that administering it per os is not a reliable method of testing its action on the organism, as it is possible and probable that it loses some of its properties during the process of digestion.

Perforating Wounds of the Alimentary Canal. F. HAHN.—Two observations are reported, one a wide stab in the stomach after a hearty meal and the other extensive laceration of the small intestines by the kick of a horse. Both were cured with a prompt laparotomy, extremely careful cleansing and tamponing of the abdominal cavity, especially of the subphrenic space and Douglas' sac, and abstention from opiates. The subjective condition did not seem to warrant an intervention in the second case, but Hahn followed the indications of the increasing area of dulness, the rigid tension of the abdomen and emission of feces.

Comparison of Indications for Sectio Cesarea, Symphysiotomy, Craniotomy and Premature Delivery. LEOPOLD.—Far above every consideration is the value of the mother to the home. Other children may be born; another father may take the father's place, but a mother's place can never be filled. Far better to perforate once too many times than once too few. The practitioner must deliberate with himself whether he is equal to a sectio or a symphysiotomy, and will not regret his rashness before he has finished it; also whether he has reliable and skilled assistance and whether the surroundings of the home will not jeopardize the success of his best efforts. Bearing these axioms in mind, he summarizes the indications as follows: Before term, artificial premature delivery is indicated for women who have had trouble in previous deliveries from a narrow pelvis—limit, 7 cm. conj. vera, for a flat rhachitic pelvis; 7.5 for a generally narrow pelvis. Best time is the thirty-fifth week of the pregnancy. Retention of the bag of waters and head presentation are essential conditions for success. At term. The extreme limit for craniotomy is 6 cm. conj. vera. The indications are a dead or dying child. Even if delivered by sectio, the probabilities of the survival of the child are too slight to counterbalance the danger to the mother, except in most exceptional cases. Craniotomy may also be indicated in private practice with a living child and woman in good condition when the practitioner dares not venture upon sectio or symphsiotomy, and the pelvis is too narrow for natural or forceps delivery. Sectio Cesarea is imperatively indicated in case of a conj. vera of 6 to 0 cm.; relatively indicated with 7.5 to 6, after spontaneous delivery has been found impossible even with colpeurynter and Walcher's position, and it is impossible to use the forceps, the child is living and the surroundings those of a hospital or residence ensuring a successful after-treatment. If the conditions are not all fulfilled, craniotomy should be preferred. Symphysiotomy is restricted to pelves of 7.5 to 6.5 conj. vera and the conditions should be the same as for sectio, with craniotomy the alternative. The choice between it and sectio depends upon the taste and experience of the operator. They stand on about the same plane in respect to the results for mother and child.

Implantation of the Ureter in the Bladder to Cure a Utero-Cervical Fistula. J. A. AMANN.—Brilliant success was attained in three cases in which, after a laparotomy, the ureter was cut off above the enormous cicatricial growth around its mouth and implanted in the bladder near the abdominal incision, according to the method devised and described by Witzel in *Cbl. f. Gyn.*, 1896, No. 11. Extirpation of a sound kidney or transformation of a uretero-cervical into a ureterovaginal fistula are no longer necessary since Witzel's method has proved satisfactory for all cases of the former except the rare ones accessible through the vagina.

Wiener Klinische Wochenschrift, August 17.

Sensibility of Transplanted Skin Flaps. E. STRANSKY.—The degree of sensibility is usually in inverse proportion to the size of the flap, and is least around the edges, where the regenerative processes destroy the nerve terminals. As the nerves in the new region grow into the terminals in the flap, these transfer their allegiance and serve the newcomers as terminals, although in respect to tactile sensation at least, they seem to retain the characteristic of the mother region. The points sensitive to pain do not coincide with the points of maximum tactile sensation nor of temperature. Tactile sensation appears first, followed in turn by pain and temperature sensation. Stransky is inclined to believe that the specific nature of the sensation transmitted is due to a sort of selection among the stimulations received. He noted a duality in the sensation in some cases; slight pressure felt through the stem flap in the mother region, but harder pressure, felt in the underlying region, but failed to find any such phenomenon in flaps without a stem.

Experimental Stimulation of the Cortex After Dividing Part of the Central Nervous System, to Throw Light on Cortical Epilepsy. H. E. HERING.—Experiments on twenty-seven dogs and twenty monkeys dividing the pyramidal tracts, etc., demonstrated that the nerves which produce contraction in the muscles also relax them. It was impossible to find any inhibiting tracts—like the heart-inhibiting vagus fibers, for

instance—or inhibiting centers. Neither was it possible to find any specific routes for the transmission of clonic contractions: all the corticofugal nerve-tracts capable of producing movements can also produce the cortical clonic contractions, but all are not equally excitable; the pyramidal tracts transmit the impulse to clonic contraction relatively much more readily than the others. He found that in monkeys the pyramidal tract plays a more important part than in dogs, in isolated movements of the contralateral extremities—in men still more than in monkeys. The dog, on the other hand, possesses a contralateral tract transmitting impulses for isolated movements comparatively readily, while in the monkey this tract only functionates, associated with the homolateral tract, and is difficult to excite. The homolateral tract in the monkey has a much more detailed function and is more readily excited than in the dog.

St. Petersburger Medicinische Wochenschrift, August 5 and 12.

Abdominal Fat Necrosis. TRUHART.—The acute affection characterized by hemorrhages in the pancreas, fat necrosis of the gland and surrounding tissues, with patches in the mesentery, omentum and peritoneum, and the omentum bursa filled with a septic chocolate fluid, retained if Winslow's foramen is closed by adherences, if not, disseminated and producing abscesses in or outside of the peritoneum, first described by Balser, is ascribed by some to a microbian origin, but Truhart is confident that it is due to chemical action by the steapsin—the fat-decomposing enzyme of the pancreas—destructively in contact with the abdominal fat tissue. He proves this assumption by a number of facts derived from experimentation and clinical experience, both personal and collected in literature, some equivalent to experiments *in homine vivo*. The fat necrosis is never an idiopathic disease but is merely a symptom, a manifestation of an existing affection of the pancreas. It affects well-nourished persons with a tendency to be fat, usually in the midst of perfect health, commencing suddenly with intense pain in the epigastrium, vomiting, constipation or diarrhea and collapse, terminating fatally in a few hours in some cases. (See Scott's observation, JOURNAL, xxxii, p. 882.) In the subacute, more chronic cases, an important sign is a tumor-like distension of the upper abdomen, extending from the left hypochondrium to the left lumbar region. In 20 per cent. of the 100 observations of "Balser's disease" collected the symptoms simulated ileus to such an extent that the abdomen was opened and closed, the operator no wiser than before. It was correctly diagnosed *in vivo* only seven times (Körte 4 in 5; Fitz, Halsted and Atkinson, 1 each); two of these cases were successfully operated on. Diabetes appeared 1½ years later in one. Prognosis is grave, although spontaneous recovery has occurred three times after expulsion of quantities of necrosed fat tissue and pancreatic substance per anum. Truhart suggests that even slight gastroduodenal catarrh in persons with a tendency to obesity should be treated with especial care to prevent the extension of the lesions into the pancreas, and general arteriosclerosis with other hygienic and local prophylactic measures, milk diet, etc. Reviewing 1000 observations of affections of the pancreas on record, he notes that 10 per cent. are mentioned as accompanied by more or less abdominal fat necrosis.

Behavior of the Uterus After Extirpation of Both Ovaries and Their Transplantation to Another Point in the Abdominal Cavity. H. RUBINSTEIN.—Various theories have been advanced to account for the atrophy of the uterus after extirpation of the ovaries, some assuming a nervous connection between them, a trophic dependence of the uterus upon the ovaries, etc. The theory that explains it as due to an "internal secretion" by the latter, indispensable to the life of the former, has received strong confirmation by the experiments described in this preliminary communication, in which both ovaries in rabbits were extirpated and replanted in another part of the abdominal cavity remote from the uterus. If the ovaries then atrophied, the uterus atrophied also, but if the ovaries took root in their new home and continued their functions, the uterus remained normal in every instance, and some of the rabbits had several litters afterward. Clinical facts also confirm this assumption; Curatola and Tarulli's statements that the metabolism in castrated animals is very different from that of uncastrated animals; the success of ovarin, and of castration for osteomalacia, etc., all tend to establish that the ovaries have an important function besides the genital.

Gazetta degli Ospedale e delle Clinische (Milan), August 6 and 13.

Diagnostic Value of Kernig's Sign. A. CIPOLLINA.—Netter found this sign in 90 per cent. of his cases of meningitis, but Cipollina missed it in some cases of severe meningitis and has found it in other affections without meningitic symptoms or lesions. He notes the fact that when it is absent the meningitis is nearly always of tubercular origin. Attempts to produce it experimentally failed absolutely. He recommends it as an indication of great value, although not infallible.

Protecting Action of the Lungs. C. CAFIERO.—A series of experiments on animals is described in detail, which confirm the assumption that the lungs have a decided protecting action in respect to toxins, and that it is due to the living lung, and not merely to the living tissue of the non-respiring lung, but to the respiratory function of the living lung.

Capacity of the Red Corpuscles for Hemoglobin. A. RIVA.—In studying the physiopathology of chlorosis, radiography has confirmed the hypoplasia of the blood-forming organs noted by many in this disease, showing the predominance of the bone tissue. The most important point in this communication is the announcement that in chlorosis the capacity of the red corpuscle for hemoglobin is reduced. The number of red corpuscles produced may not vary much from normal; Riva has frequently observed in pure primary chlorosis that the number of erythrocytes were scarcely inferior and occasionally superior to normal. But they are delivered to the circulation with certain inherent peculiar biochemic differences from normal, which interfere with the normal formation and accumulation of hemoglobin, and to this he ascribes the essence of chlorosis, although this factor may be accompanied by hypoglobulia, poikilocytosis, etc. The cytogenic and hemoglobin-genetic functions of the red corpuscle are quite distinct, and correspond to different phases in its life, as it is born colorless and gradually accumulates the hemoglobin in its stroma, except when this function is compromised. He also ascribes to this reduced capacity of the corpuscle the inefficacy of preparations of organic iron. The small amount and the stability of the iron render it impossible for the chlorotic and impotent corpuscle to derive any benefit from it, while preparations of inorganic iron are utilized to a remarkable extent.

Havana Medica, August.

Tropical Anemia and Its Relation to Malarial Infection. A. PLEHN.—The sallowness and anemia noticed in persons in malarial localities, even in the absence of or previous to malarial manifestations, is explained by Plehn as due to the presence of certain granules in the red corpuscles, which he considers the fundamental forms of the malarial parasite, living possibly, months and years in the red corpuscles without producing any symptoms except more or less anemia, until circumstances arise that favor their development into the plasmodium, and consequent pronounced malarial infection. When evidences of anemia and a diminished amount of hemoglobin appear, if a drop of the blood on a cover-glass is treated with alcohol and hematoxylin, alum and eosin (Ehrlich), dots and spots of dark blue will appear in some of the red corpuscles, usually round and grouped in chains of two or more, about 1/3 μ in diameter. They are some times noted also in the plasma, after destruction of the red corpuscles. These granules disappear completely when the anemia passes into acute malarial infection, especially during hematuric bilious fever, to reappear during convalescence. He has noted them in Camarones, in the Roman Campagna, in sailors after voyages in malarial latitudes, etc. The mosquito can not be the only means of contagion in Camarones as there are comparatively few insects there, and the crescent forms of the plasmodium are extremely rare. (From *Rev. de Med. y Cir. Practs.*)

Significance of Melanin in the Blood Plasma in Malarial Infection. E. EDELMANN.—After establishing that the melanin found in the blood is not a product of the plasmodium, but is derived from the hematin, Edelmann states that during an attack, when the blood is loaded with malarial parasites, and the fever is destroying the red corpuscles, the blood will be found to contain numbers of living and dead plasmodia and melanin free and enclosed in the leucocytes. But if the blood is examined after the attack no parasites will be found nor any leucocytes containing melanin. The question what has become of them? he answers by asserting that they have all been imprisoned in the spleen, where the normal number of lymph-cells has been multiplied to protect the organism from the invasion of the parasite.

Societies.

COMING MEETINGS.

American Association of Military Surgeons of the United States, Kansas City, Mo., September 27-29.

American Association of Obstetricians and Gynecologists, Indianapolis, Ind., September 19-21.

American Electro-Therapeutic Association, Washington, D. C., September 19.

Medical Society of the State of Pennsylvania, Wilkesbarre, September 18-20.

Medical Society of the Missouri Valley, Council Bluffs, Iowa, September 21.

Venango Medical Society.—This Society will hold its next monthly meeting at Oil City, Pa., September 19.

Bradford County Medical Society.—This Pennsylvania Society held its fiftieth anniversary banquet at Towanda, Pa., September 12.

Lancaster City and County Medical Society.—This Society held its regular meeting at Lancaster, Pa., September 5, when three members were elected.

Miami and Shelby County Medical Societies.—A joint meeting of these two societies was held at Piqua, Ohio, September 7. These meetings are held quarterly.

Calhoun County Medical Association.—This Association met in Marshall, Mich., September 5. It was decided to hold the next meeting in Battle Creek, December 12.

American Association of Military Surgeons.—This Association will hold an open session at their coming meeting at Kansas City, on the night of September 27.

Tri-State Medical Society.—The eleventh annual meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee will be held in Chattanooga, Tenn., October 24-26. Those desiring to read papers should send titles to Dr. Frank H. Smith, Chattanooga, Tenn.

McLean County Medical Association.—The regular monthly meeting of this Association was held at Bloomington, Ill., September 7. Dr. Nusbaum presented a very interesting paper on "The History and Origin of Johns Hopkins University and Hospital." The Association purposes issuing a booklet containing the names of its members, with a brief sketch of each, and the names of all deceased members, from its organization.

International Congresses in Paris in 1900.—July 23-28, International Congress of Medical Ethics; July 27-29, International Congress of the Medical Press; August 2-9, Thirteenth International Medical Congress; August 2-9, Fourth International Congress of Dermatology; August 10-17, Tenth International Congress of Hygiene and Demography; August 12-15, International Congress of Hypnotism.

Conference of Michigan Health Officers.—The important meeting of health officials in Michigan, the date for which was not fixed at time of first announcement, will be held at Grand Rapids, Oct. 26 and 27, 1899, and the conference will probably be one of the most instructive and useful ones ever held in Michigan. Besides the members of the State Board of Health, other prominent sanitarians, of national reputation, will be present.

Mississippi Valley Medical Association.—The twenty-fifth annual meeting of this Association will be held in Chicago, October 3, 4, 5 and 6. Dr. H. N. Moyer, Chicago, is chairman of the committee on arrangements. The officers are as follows: President, Duncan Eve, Nashville, Tenn.; First Vice-President, A. J. Ochsner, Chicago; Second Vice-President, J. C. Morfit, St. Louis; Secretary, Henry E. Tuley, Louisville, Ky.; Treasurer, Dudley A. Reynolds, Louisville, Ky.

California Academy of Medicine.

August Meeting.

TABES WITH UNUSUAL SYMPTOMS.

DR. PHILIP KING BROWN presented, for the consideration of the Academy, two cases of tabes with unusual symptoms.

CASE 1.—Mrs. S., aged 44½ years, was first seen in May, 1899. She was married at the age of 18½ years, and subsequently gave birth to a normal child, still living and well. Three miscarriages followed, one at six weeks, another at six months and the last at three months; she has not been pregnant since. At the age of 19½, following the birth of the first child, she had what was called "ulceration of the womb;" this was treated with blue vitriol, and cured. She had no further trouble from this source, nor has she ever had any headache, eruption or sore throat, save at one time, when in New York, when she had headache, eruption, and other symptoms, which were said to have been caused by sewer-gas poisoning. At the age of 21 she had an attack of pleurisy, and sixteen years ago she suffered from very severe neuralgic pains in the left hip, which seemed to be confined to the joint, and lasted for five weeks, with occasional brief intermissions.

At the age of 33 she first had dyspepsia; distress, accompanied by a great deal of gas, following everything eaten. This persisted for two years, and was followed by a period of three years when she was well and comfortable, complaining of no physical ailments. At the end of this period of rest, nausea first made its appearance, lasting all day for a time after its advent, but latterly being present only in the early morning hours. After vomiting, relief is felt for the rest of the day. When the nausea appears during the day, if she can eat and then immediately lie down, she experiences relief from the distress. For the past four or five years she has had occasional "girdle sensation." The sharp neuralgic pain which appeared in the right hip sixteen years ago has returned from time to time since that date; it is always referred to the same location, though at times the pain shoots down the right leg. In September, 1897, the pain appeared in the right heel; it was also neuralgic in character, and would last all day, with sharp exacerbations about every ten minutes. In February, 1897, she first noticed some dizziness, persisting day and night, and worse when lying down. In March, 1897, while in a condition of fair health and comparative ease, the patient awoke one morning with the right pupil dilated; it remained dilated three days, when she applied to Dr. Martin for relief. He instilled drops which contracted the pupil; it then remained contracted for three months, in spite of all efforts to dilate it. The left pupil then suddenly dilated, and after two days slowly contracted to the present size; both pupils have remained contracted, as at present, ever since. Dr. Martin gave her potassium iodid and mercury. She later consulted Dr. Barkan, who gave her potassium iodid, 30 grains three times a day. She next consulted Dr. Hirschfelder, who prescribed 300 drops of a 50 per cent. solution of potassium iodid, three times a day, and also gave her thirty-six inunctions of mercury. With the onset of the trouble in the left eye, the patient noticed numbness in the right foot and the left heel, both of which conditions have persisted since then, never disappearing, though at times becoming somewhat better.

The record of the patient, made two years ago and filed in Dr. Barkan's clinic, is as follows: "The patient has diplopia in both eyes, especially marked when she looked down; there is paralysis of all the muscles of the eyes except the external recti; ptosis is marked; the discs are normal." She complained of vertigo and could not stand with the eyes closed nor walk a chalk line; the hearing was normal. Some anesthesia was noted about the eyes, particularly above them.

She has never been constipated, but on the contrary had occasional attacks of diarrhea, coming on without apparent cause, and lasting for four or five days; these attacks have been noticed at times for a period of between four and five years. For six years past, she has been subject to occasional laryngeal crises, and pharyngeal crises have been of occasional occurrence for about the same time. During the pharyngeal crises she is unable to swallow while sitting up, but is able to do so, with some effort, when lying down. These crises recur every few months. In May, 1899, she had for the first time a cardiac crisis, the pain strongly resembling angina, lasting for two days and being somewhat paroxysmal in character. It was for the pain in the region of the heart that the patient called in the services of Dr. Brown, who then first saw the patient.

His notes, taken at that time, show the patient to be a small woman, fairly well nourished, with no signs of eruption on the body, no motor paralysis and no anesthesia of the chest on objective examination. The Argyll-Robertson pupils are present

and the Romberg symptom is marked; the patellar reflexes are greatly exaggerated but the achilles and plantar reflexes are abolished. The Fränkel sign is wanting. Examination shows the heart to be physically normal; no increased area, sounds normal, and no arteriosclerosis. The urine was normal and the stools showed the presence of much mucus. She was placed on a treatment of 20 grains of potassium iodid three times a day, together with inunctions of mercury. Biniodid of mercury was later substituted for the inunctions. Up to August 5, when last examined, the chest showed no anesthesia, though an area of partial anesthesia, about half an inch wide, and extending down the inner side of the arms and forearms, was noticed; this is somewhat variable, but on the whole, persistent.

The stomach was frequently tested with the following result: Normally no hydrochloric nor no lactic acid could be detected. The vomited material was slightly alkaline, and showed neither hydrochloric nor lactic acid. After a test breakfast, following an attack of vomiting and hence when the stomach was otherwise empty, the result showed a faint reaction to litmus, no hydrochloric acid and a large lactic acid acidity. The stomach contents have been examined many times, but on no occasion has any trace of hydrochloric acid been found, and this in spite of all effort to stimulate secretion. A fairly well defined girdle sensation has been present for some time previous to my examination.

The patient was presented, and the various symptoms demonstrated. The Argyll-Robertson pupil was marked; the knee-jerks were very evidently exaggerated, but the amount of inco-ordination was markedly small. Difficulty was evidenced in standing with the eyes closed and in walking a chalk line.

Dr. Brown said: The case is reported for the reason that it seems a clear case of tabes, presenting some very rare and unusual symptoms. The knee-jerk is exaggerated, instead of being abolished, and this condition is extremely rare. The nature and occurrence of the various crises, too, is rather rare and unusual, and the amount of inco-ordination is much less than one would expect. The patient has the tabetic jaw, all the teeth having suddenly fallen out some time ago. While this woman does not present a perfectly clear, classical picture of tabes, there are present so many of the distinctive characteristics of that affection that I feel justified in classing the case as one of tabes, with unusual symptoms.

Another case came within my notice in July, it also presenting many symptoms of tabes, while at the same time many of the conditions present were unusual for that affection. The history obtained from the patient is as follows:

CASE 2.—Mrs. H., aged 45 years, for the past four years has had attacks of pain in the region of the angle of the scapulæ, lasting continuously day and night for two weeks at a time. Her past history is as follows: She was a strong, healthy woman up to the commencement of the pains mentioned, about four years ago. She has had several miscarriages, one fifteen years ago, at three months, and one two years ago, at six months; she has had several children, the oldest being 17 and the youngest 8 years old. One child died a year ago, at the age of 3 years; the patient had pains in the back three months before this child was born. She has had no headache, no sore throat; she has lost in weight in the past four years, falling from 145 to 95 pounds; much of her hair has fallen out during this time, but there is no history of other trophic disturbances. An eruption appeared on the body about six years ago, following the birth of a child, which is still living. The patient has not menstruated for the past two years. Four years ago, at the onset of the present trouble, attacks of nausea made their appearance and have been of daily occurrence since that time. The pain in the back is frequently relieved by vomiting; she has never vomited blood nor coffee-ground material. The pain in the back seems to be worse after taking food and is aggravated by bathing.

Examination shows the right pupil to be more dilated than the left and to react more quickly to light stimulus and accommodation. The knee-jerks are abolished; inco-ordination is much more marked in the upper than in the lower extremities; it is slight in the legs. Anesthesia is strongly marked over the intermammary region. The anesthetic area is sharply defined, extends from nipple to nipple, and is about 5.5 cm. in width. The patient is very constipated and has been so since the beginning of the present illness. For the past three or four months the bladder has been irritable. The epitrochlear, cervical and inguinal glands are all enlarged. The urine is pale, acid, sp. g. 1.020, shows a trace of albumin with hyaline and graular casts. Justus' test is negative. It was attempted, on the statement of the patient that she had had no inunctions and, so far as she knew, no mercuric treatment. On the feet, especially the left foot, are found areas of irregular anesthesia, not corresponding to any nerve areas, and not constant. The speech is slow and at times slightly thick; patient states that this is always so. She is an exceedingly nervous woman, and seems not to be altogether well balanced mentally.

This woman has consulted a large number of physicians and has not remained under the care of any one of them long enough to demonstrate the result of any one line of treatment. Dr. Moffitt saw the patient some time ago, and perhaps he will give us the benefit of his findings at that time.

DR. HERBERT C. MOFFITT said: "I saw this patient in February of the present year. I gave her prescriptions for potassium iodid and mercury, but she did not again consult me. At that time she gave me a history that differs materially from the history subsequently given to Dr. Brown and just reported by him. What I gathered from her was substantiated and added to by her husband, who called upon me the day following her visit to me. She told me that she had had the abortions *induced* and that her trouble dated from the last one which she had successfully attempted. She also said that the eruption referred to as following the birth of a child had appeared on the child and not on herself. The knee-jerks were present at the time of my examination, the left one being somewhat livelier than the right. There was then no anesthesia on the chest, but there was analgesia on the back. The inco-ordination seemed to be more of the nature of a muscular paralysis than anything else, and I noticed some wasting of the muscles on the left side. There were no symptoms, of any particular importance, and I thought the case one of cerebrospinal syphilis rather than tabes. There was also a large element of hysteria. The symptoms of which she spoke to me, and the only ones which I elicited, were the pupils, the analgesia and the bladder affection; the husband spoke of lightning-like pains; there was nothing of the nature of the girdle sensation at that time. It seems to me that the knee-jerks disappeared too rapidly for it to be a case of tabes. The onset, too, was rather, sudden, and while there is nausea, there does not seem to be any definite crisis."

DR. BROWN did not agree with Dr. Moffitt, but thought it a case of tabes with rather unusual history and symptoms. The tabetic lesions would explain the symptoms and conditions as presented, and such diagnosis seemed more probable than cerebrospinal syphilis. The cases were reported to the Academy, Dr. Brown said, with the hope that they would draw attention to a by-no-means small class of cases that pass from one physician to another, the actual condition not often being diagnosed, on account of the number of symptoms and their being masked to a greater or less extent.

DR. DOUGLASS W. MONTGOMERY said that in mentioning the fact that many cases do wander from one doctor to another, Dr. Brown had brought to his recollection an instance in point, and one akin to the cases reported. Dr. Montgomery said: "The history of the case, as I remember it, was about as follows: A man consulted me one day some few years ago, giving a history of nausea and vomiting which had persisted for a long time, recurring at intervals and occasionally sufficiently severe to completely prostrate him. He had lost considerable flesh as a result of these attacks of nausea and vomiting. In his search for relief he had consulted a number of doctors, various diagnoses and opinions having been rendered by the gentlemen consulted. One opinion was to the effect that he suffered from an overfilling of the gall-bladder, which then emptied into the stomach, thus producing the nausea. He was sitting very near to me, at my right, as I was taking the notes of his case, when suddenly he clapped his hand upon his thigh and exclaimed 'there! Sometimes I have sudden pains, just like that!' referring to a pain in his leg which had very suddenly appeared. I was at once aroused, looked at his eyes, found the Argyll-Robertson pupil, and then extracted a fairly good history and picture of tabes. The knee-jerks were absent, he could not

stand with the eyes closed, and he could not walk a chalk line. The sudden lightning-like pains had been in evidence for some time past. He was seen by Drs. Newmark and Sherman, who both agreed as to the diagnosis. I told him what the trouble was, that the nausea and vomiting were a symptom and would probably disappear after a time. Subsequently, he had quite an adventurous life. He was trephined by one man, on account of an old injury to the head, he having been shot many years before. Later he submitted to a laporotomy for the purpose of examining the liver and stomach. When I last heard of him he was somewhat improved, for the stomach crises had not occurred for quite an interval. This man's history is certainly appropos of what Dr. Brown said as to the many cases going about from doctor to doctor with the true cause of the trouble not understood or made out."

DR. HARRY M. SHERMAN said: "I saw this patient with Dr. Montgomery, and I thing there can be no question as to the fact that the man had tabes. He had been frequently exposed to syphilitic infection, though I do not remember whether a history or syphilis was obtained from him. A rather curious fact in connection occurred in my own experience. I was treating a child of this man for what I supposed was hip-joint disease. But the joint trouble improved so rapidly that I was forced to abandon the diagnosis. Very shortly after the child got well and left my hands, I learned of the syphilitic trouble with the father and rather concluded that the hip-joint affection was the result of syphilis. A short time afterward I treated a child for spinal disease; what I thought was tuberculosis of the spine. He did very badly, much to my disappointment, and finally left me. In speaing of the case to Dr. Montgomery, somewhat later, I learned that the father of this second child was a syphilitic, and the conclusion that here too the trouble may have been of syphilitic origin was forced upon me. These two cases form a distinct class in my mind. In both cases the diagnosis at first apparently clear, had to be given up; and in both cases I later learned that the father was syphilitic and had been so for years."

PLASTER-OF-PARIS INJECTIONS TO LOCATE FISTULA

DR. J. F. MCCONE sent a communication which was read, as Dr. McCone was unfortunately prevented from being present himself and presenting the matter in question in person. The communication set forth what Dr. McCone thought to be a new method of surgical procedure, and one which certainly was original with him. The suggestion of Dr. McCone was that, ischiorectal fistulæ, the fistulous tracts and canals be injected with soft dental plaster-of-paris, that it be allowed to harden, and that the fistula and its ramifications could then be more easily and effectually dissected out, leaving a clean fresh wound which would heal by first intention. He had employed the method in one case with entire satisfaction and requested that it be tried by other members of the Academy and the results considered. This novel method of locating fistulous ramifications was discussed at some length.

DR. DUDLEY TAIT, who at the request of the Chair read Dr. McCone's communication, thought that in its present shape the subject was not in the best light for discussion; Dr. McCone had not entered sufficiently into the special feature he advocated, and the previous treatment of the case reported was decidedly open to criticism. He would suggest that it be referred back to Dr. McCone for his revision and presentation at a future meeting.

DR. MONTGOMERY, the president, stated that it was at his personal request that Dr. McCone had sent in the communication read. He had requested the doctor to do so in order to secure a record of publication of the method employed, which seemed to be original, and thus not run the chance of the loss of priority of an improved procedure.

DR. PHILIP KING BROWN was inclined to doubt the possibility of injecting all the ramifications of a fistula with the plaster, for the reason that they would be, in all probability, already filled with debris, broken-down tissue, etc., and hence the plaster would not penetrate the canals far enough and well enough to be of any unusual value. He also called attention to the fact that many of these sinuses were of tuberculous origin, and such being the fact, in any given case, it would not be possible to remove all the tissue involved, even should the plaster penetrate all the sinuses. The tuberculous involvement would be more extensive than the sinus. If sufficient force were employed to inject the sinuses fully, he was of the opinion that damage could result.

DR. HERBERT C. MOFFITT called attention to the fact that forcing the plaster into the sinuses by pressure would possibly induce more extensive septic infection through the forcing of the septic germs into the surrounding and healthy tissue where absorption would be rapid, perhaps resulting in a general infection.

DR. TAIT suggested that the plaster might penetrate, under the pressure employed, tissue not diseased, and that hence a greater amount of tissue than necessary might be removed in the subsequent operation. He referred to the fact that the simple excision of fistulous canals was not at all a new procedure; that for a long time it had been a recognized surgical practice to treat fistulæ by complete excision, the wound healing by first intention.

DR. HARRY M. SHERMAN spoke of the injection of arteries with plaster of paris, in which process the force required to completely inject even the smallest arterioles was not great. He thought that a fistula could be as easily injected, the secretions and debris that might be present in the canals offering little or no objection to the process. In considering the possibility of inducing a general infection, it must be remembered that fistulous canals are surrounded by walls of thickened tissue, often very dense, and that the small pressure required would scarcely force the disease germs into the healthy tissue surrounding the fistula's wall. There would also, in all probability, be a regurgitation of the contained material, the plaster solution being permitted to penetrate all the diverticula.

DR. HAROLD BRUNN said that the method seemed to him to be a most unique method of dealing with a very troublesome condition. It is at best exceedingly difficult to locate all the diverticula and ramifications of a fistula. The method suggested seemed to give promise of making this somewhat easier, and while it might be open to objections, it certainly presented many excellent features and was well worth a trial.

CANCER OF THE OVARIES.

DR. HAROLD BRUNN presented some specimens of cancer of the ovaries, with microscopic slides,. The two ovaries, removed from one woman, showed very clearly the cancerous nature of the involvement. The right ovary had been the site of a large ovarian cyst, some thirteen pints of fluid contents having been drawn from it prior to removal. On the inner surface of this cyst wall were numerous nodular masses, from the size of a pea to masses larger than a hen's egg. Some of these masses were papular in nature, but most of them showed clearly the cancerous formation of the tumors. The left ovary of the same woman was purely cancerous; it was with difficulty dug out, together with another cancerous mass in the omentum.

To Remove Blood from Clothing.—Several years ago, while contemplating the removal of a large blood spot from my clothes, I recalled the action of hydrogen peroxid on albuminous substances during operations, and immediately applied it to the spot in question and was delighted to see the stain entirely removed. Since then I have used it many times and always with the same results. The earlier the peroxid is applied after the blood spot is received, the better the effects, but I have used it on spots more than a week old, and they were completely removed. It should be used in full strength, and, after oxidation has ceased, it should be wiped off and another application made. Several such trials may be necessary before the stain disappears, but the process may be hastened by rubbing with the finger or a cloth while oxidation is in progress. If hot water has been used, or anything which will coagulate the albumin, the peroxid will not remove the stain, but otherwise its action is all that could be desired. I have frequently removed spots from my shirt-front, collars, and cuffs, and after the place was dried there was no evidence of any soiling having occurred. Quite recently I removed a very large stain from the carpet, following an operation in my office. I may add that I have never seen clothing bleached by the peroxid during the removal of spots.—J. T. Rugh, in *Phila. Med. Jour.*, August 12.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance $5.00
Foreign Postage 2.00
Single Copies . . . . . 10 Cents

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SATURDAY, SEPTEMBER 16, 1899.

REED AND CARROLL'S REPLY TO SANARELLI.

As foretold in our editorial on "The Microbes of Yellow Fever[1]," Sanarelli's remarkable attack on the bacteriologic technic of Reed and Carroll, who are stated to have claimed the close relationship of the bacillus icteroides to the bacillus of hog-cholera because of "some deplorable neglect of technical precautions in the laboratory;" did not long remain unanswered. In the *Medical News* of September 9, Drs. Reed and Carroll, fearing that silence on their part might be construed by the general medical public as an admission that they had followed faulty technical methods in their work, make a vigorous and, it seems to us, wholly successful defense of their methods in the investigation which led them to announce the rather startling view that the bacillus icteroides should be regarded as a variety of the hog-cholera bacillus. Reed and Carroll express full willingness to acknowledge that the cultures of two microorganisms might become mixed, by some oversight, in any laboratory, and if it can be proved that such is the case in this instance, they will hasten to admit their mistake. They then go on to show that they worked for seven months with a pure culture of Sanarelli's organism, obtained from the Pasteur Institute, before a culture of the hog-cholera was brought into their laboratory and that during this time, before there was any possible chance for any mixture to occur, they had frequently obtained focal necroses in the livers of guinea-pigs injected with Sanarelli's bacillus—focal necroses which Sanarelli states are "entirely specific for hog-cholera." They also remark that Dr. Theobald Smith, whose extensive work on hog-cholera is authoritative the world over, on being told of some of the early results, stated it as his opinion that the bacillus icteroides would yet be placed in the hog-cholera group.

Reed and Carroll then take up one by one Sanarelli's criticisms of their work and find good reasons and abundant opportunities to suggest to their critic that he should follow the same advice he so willingly gives others, "and spend a brief time consulting the literature" on various subjects. It appears that Sanarelli has fallen into the error, and this error is not new, of confounding the bacillus of swine-plague with the bacillus of hog-cholera—two quite distinct organisms; furthermore, that Sanarelli lays bare an apparently astonishing ignorance of the wide-spread occurrence of focal necroses in many infections and intoxications, including their development in animals injected with the bacillus icteroides, which is also described by De Lacerda and Ramos and by Della Rovera, who thus contradict Sanarelli's statement that focal necroses never occur in the livers of animals so treated. Reed and Carroll consider extensively the question of fatty degeneration in the livers of dogs injected with bacillus icteroides, and show quite conclusively that the amount of fat produced is variable, depending on variations in the resistance of the animals rather than on the microbe used, the livers of some of the dogs injected with bacillus of hog cholera being markedly degenerated. They emphasize again the remarkable agglutinative power which yellow-fever serum exerts toward the hog-cholera bacillus and the remarkable similarity in the clinical symptoms and anatomic picture produced in dogs by bacillus icteroides and bacillus of hog cholera.

On the whole, Reed and Carroll have strengthened their position in holding the opinion that bacillus icteroides is a variety of the hog-cholera bacillus. Sanarelli's refuge to the supposed victimization of Reed and Carroll by some "gross and deplorable error" seemed from the first a decidedly weak point in his part of the controversy because the methods followed in the laboratories of the Army Medical Museum are above all suspicion. His aspersions on the scientific spirit of the workers in the laboratory are certainly nothing more nor less than contemptible.

[1] Journal, Sept. 9.

ZOÖPHILISM AND DEGENERACY.

Undue love for animals (zoöphilism) such as so frequently finds expression in antivivisection fanaticism, has frequently been found associated with various forms of degeneracy and especially with its mental expressions in connection with suspicional and persecutory conceptions.

As the JOURNAL pointed out some time ago, the suspicional world-betterers whose cruelty marred the French Revolution were all of them zoöphilists whose love for animals contrasted markedly with their severities toward human beings. The fanatics who were guilty of such brutalities during the East Indian mutiny were intensely opposed to the taking of animal life. Very frequently

the suspicional ideas are especially extended toward blood relatives. The mother of Savage, the poet, who persecuted him with such malignity, was very fond of cats and lap-dogs. The fifth (or "wicked") Lord Byron, the immediate predecessor of the poet, was notorious for his dueling propensities, for his disregard of major and minor morality, for his cruelty toward his kin, and for his brutality toward his servants. Having built mock forts on a lake in his park, and put a fleet of toy gunboats on the water, he used to amuse himself with mock-fights of a naval character, the toy ship firing away at the forts, which returned the fire in gallant style. When he was weary of this ridiculous game, the old man used to lie on the ground and gossip with the crickets, whom he loved far more than his descendants. When the crickets were troublesome, he used to whip them with a wisp of hay. The crickets are said to have left the Abbey in a body as soon as their one friend of humankind was dead, and never to have returned thither. The same feature appears in the wife and daughters of Claude Bernard, the French physiologist. According to the recent life of Claude Bernard, by Sir Michael Foster, the physiologist married a woman of degenerate stock, descendant from the French aristocracy of the pre-Revolutionary epoch. This woman had suspicional and persecutory ideas of that systematized type which so often occurs in degenerates prior to the full development of paranoia. After making Bernard's life miserable, his wife took her daughters and left him, alleging as a reason his experiments in vivisection. One of the daughters carried her antivivisectionism so far as to interrupt physiologic lectures, and was arrested therefor more than once, but the offense was condoned because of the manifest mental disorder present in her. There was evidence to show that her zoöphilism took at times a sexually abnormal direction. In a will, which was subsequently modified by the court as in violation of the French laws governing wills, she left large sums for a hospital and asylum for dogs and cats.

Commenting on her procedures, the *Chicago Chronicle* remarks that on the theory of heredity, this daughter's performance reflects more suspicion on the father's sanity than anything he ever did himself. The usual but erroneous inference is drawn of the exclusive importance of the father in heredity while that of the mother is here entirely ignored. The *Chronicle* comments severely but logically anent the antivivisectionists. The curious thing about these pranks is that motive never seems to have any weight with them; it would not surprise one if they some day object to the study and destruction of bacteria as cruelty to animals. This erroneous view of bacteria—whose zoölogic position is not settled, whence the name "microbe"—has already been taken by zoöphilists in New York, Boston, Philadelphia and Chicago, who have denounced the experiments in this direction for the reason stated by the *Chronicle*.

In New York a curious inconsistency has occurred. Some years ago experiments in vivisection made by Spitzka, for the purpose of demonstrating the nosologic limitations of hydrophobia, were approved by the New York Society for the Prevention of Cruelty to Animals, on the ground that they tended to prevent cruelty to dogs wrongly suspected of having hydrophobia. Some thirteen years later the Society, having obtained the spinal cord of a dog which had bitten several people, refused to allow this cord to be used in Pasteur experiments for the purpose of allaying the fears of the persons bitten. Experiments in vivisection for the benefit of animals were praiseworthy, but the same experiments for the benefit of human beings were atrocious brutalities.

RENAL INSUFFICIENCY.

Recognition of the condition in which diseased kidneys are no longer capable of performing their function is a matter of great importance and interest for both physician and surgeon. For this purpose purely clinical evidence is insufficient; nor is it possible to reach a trustworthy conclusion from examination of the urine, or from a study of the bodily metabolism or of the constitution of the blood, while the determination of the latter would, besides, be attended with considerable difficulty. A more practicable and a more satisfactory method of gaining the desired information consists in a determination of the molecular concentration of the blood by ascertaining its freezing-point.

It has been found that the molecular concentration of human blood, as well as the blood of various animal species, is, as represented by the freezing-point, fairly constant under physiologic conditions, being between 0.56 and 0.58 C. lower than that of distilled water. This constancy is to be attributed largely to the activity of the kidneys, as the most important of the eliminative organs. In the event, however, of failure or insufficiency in the function of the kidneys the molecular concentration of the blood is increased and the freezing-point falls. The accuracy of this observation has been established both experimentally and clinically, and additional experimental evidence is furnished by Richter and Roth[1], who, as a result of their investigations, have arrived at the following conclusions: 1. The normal reduction of the freezing-point of rabbits' blood, as compared with distilled water, is a constant physiologic standard—0.56 C.—from which there may be slight variations—0.54 to 0.59 C. 2. When the activity of the kidneys is abolished by bilateral nephrectomy, and the products of nitrogenous metabolism are not eliminated, the molecular concentration of the blood is increased, in consequence of molecular retention, and the freezing-point of the blood falls. 3. Unilateral nephrectomy does not cause molecular retention in the blood, because the remaining (healthy) kidney assumes the functions of both organs. Molecular retention takes place, how-

[1] Berliner Klin. Woch., July 24, 31, 1899.

ever, if the remaining kidney is injured. 4. Nephritides due to poisons, bilateral and hematogenous origin, are characterized by molecular retention and consequently by more or less marked pathologic reduction in the freezing-point. The disturbance is greater and sets in earlier when the vascular apparatus of the kidney is principally affected or the nephritis is diffuse than when the tubular apparatus is in greater degree affected, but in all instances the reduction is proportionate to the intensity of the pathogenic factor and the degree of anatomic alteration. Mechanical obstruction of the urinary tubules by means of artificial infarcts also results in molecular retention and in corresponding reduction in the freezing-point of the blood. 5. Pathologic reduction in the freezing-point of the blood is induced by the retention of the products of nitrogenous metabolism, but not by that of sodium chlorid; the latter may even exhibit attenuation.

The existence of anemia or of anasarca may prevent the usual reduction in the freezing-point in the presence of molecular retention, and the phenomenon is not of so much importance in the diagnosis of renal disease as it is in formulating decisions as to the performance of nephrectomy in suitable cases.

"CHEAP JOHN" MEDICINE.

The medical profession has not been troubled in this country as much as in Great Britain, by competition of low-priced club practice, but we now and then see signs of its existence. In our large cities we have the possibly greater evil of dispensary abuses, and everywhere exists the cheap and nasty in quackery of every variety. To some form of this, we assume, refers the following quotation from a lay paper that has recently come to our notice: "It might have been supposed that the climax of low-priced medical treatment had been reached when patients could receive medical advice, with medicine, at the rate of $5.00 a month, and later as low as $1.00 a month, but it seems the bottom has not been touched. A medical institution advertises in the local papers to give the best physician's advice, consultation and examination and furnish medicines all for 50 cents." The lay journal goes on to say that the next step will probably be for newspapers and magazines to furnish subscribers with medical advice and medicine gratis, and then perhaps some one will go one better and throw in life insurance. It may be some little consolation to feel that this sort of fraud in time makes work for the true physician, but it is a melancholy one at best to the philanthropist. There is a great waste of pain and suffering generally in this world through the "cheap John" doctors.

PAINLESS CAPITAL PUNISHMENT.

A new proposal has been offered to lessen the sufferings of the unfortunate murderer who has to undergo the pangs of capital punishment. Instead of hanging, which has already been held as barbarous and has been abolished in New York, or electrocution, which it is claimed is not the same in its action on all persons and therefore may even sometimes cause pain, it is now proposed, in a paper read before the American Association for the Advancement of Science, to carry out capital punishment by poisoning with hydrocyanic acid and under conditions that will make it entirely painless and unexpected. The convicted criminal is to be taken to the death-chamber, which is to be connected by pipes with retorts generating the vapor, and some night when he is peaceably sleeping, it is to be suddenly turned on and he will peacefully pass out of this mortal existence. The date is not to be fixed, but is to be at the discretion of the authorities, within certain limits, covering several months, so that it is presumed he will be spared the mental agony of expectation to a large extent. The proposition might go still further and leave him in ignorance of his conviction, but that does not seem to have been suggested. After all, it may be considered questionable whether any of the plans offered has any great advantage. Sudden death of any kind is likely to be comparatively painless, and the elimination of the element of expectancy is a rather dubious advantage. If capital punishment is deemed necessary, it is to some extent as an example and deterrent, as well as to eliminate harmful individuals, and it is doubtful whether it should be made attractive. The old public executions made popular heroes, the newer suprahumane methods may err also in another way.

IS CHILD HOMICIDE LEGALIZED?

The attorney-general of Illinois has lately rendered a decision that the courts ought not to confirm, or if they do, it will be time to correct their narrow interpretation by new and unequivocal legislation. A child aged 6 years, died in Douglas county under Christian Science treatment, and in reply to an inquiry from the state's attorney of the county the attorney-general rendered an official opinion that, according to the clause in the Medical Practice Act, "mental and spiritual" means are legalized and that the sections of the criminal code against willfully endangering the life of a child did not apply, since it was not done willfully, but in good faith. This is equivalent to saying that if the parents or others in charge of an infant are under any kind of an honest delusion that would make them sacrifice or endanger its life, the law gives it no protection. He does not even hint at the rational alternative—their seclusion in a lunatic asylum—probably recognizing the fact that such imbeciles are too numerous in these present days of popular voodooism to protect infant life in that way. While, as the *Chicago Tribune* says, according to our practice in this country, "a man or woman who has reached years of discretion" is supposed to be able to take care of himself or herself, it is no enlightened view of the law that applies the same construction of it to helpless infants, or children who can not act for themselves. If this opinion is to be the last word on the subject we may look for an extensive slaughter of the innocents, by the well-paid mercenaries of "Christian Science," "Dowieism," and other like fads. We had supposed that the premiums on murder were wiped out of the law, but according to this attorney-general we are having new ones enacted by statute. It can not be that he is right, and the opinion should be

regarded as only the individual utterance of a narrow technical official. The law certainly can not intend that the most helpless and the most deserving of our sympathy and care are to be denied its protection against bigotry and ignorance.

A POSSIBLE CHECK TO QUACKERY.

A careful study of Circular No. 12 of the Internal Revenue Department is suggestive of some possible checks to quackery under the present revenue laws. The object of the law is to tax all special proprietary, trademark, or patented medicines, druggists' popular nostrums, all "non-secret" remedies, all advertised cures, and all physicians' advertised prescriptions or medicines, the demand for which is created by post-office solicitation, as well as perfumery, etc. According to the attorney-general's opinion: "Any medicinal article will be held to be advertised on the package or otherwise as having any special claim to merit, or to any peculiar advantage in the mode of preparation, quality, use or effect, when any description of it, either on the package or otherwise, includes any statement to the effect that it has a special or peculiar merit or value over other like articles or articles of the same class; or when it has any word, phrase, or sentence, either in the title or formula, or otherwise, which indicates its superior merit over articles of its class." The repetition of the "or otherwise" after each specification of advertising in the above makes the opinion a very broad one in its practical application. It covers not only every printed claim, but the recommendations of street fakirs and counter prescribers, as well as the special remedies of the advertising quacks. Whether this will cover all the drugs used by advertising doctors is a question, but from the reported instructions to revenue collectors it appears possible that such might be the interpretation put upon it by the department. There are certainly evidences that a more rigid enforcement of the war tax on advertised and proprietary preparations is intended, and the result should be a salutary limitation of quackery. If these frauds are made generally liable to the jurisdiction of the federal courts, there will be a somewhat better chance for their restriction or extinction.

VARIATIONS IN CEREBROSPINAL PRESSURE IN ASSOCIATION WITH CONVULSIVE ATTACKS.

The epileptic attack has been attributed to various and even opposite influences, thus to both cerebral anemia and cerebral hypermia, local or general, to both increase and diminution in intracranial pressure, to accumulation and discharge of nervous energy, but no one explanation is entirely sufficient or satisfactory for all cases. Sometimes the one, sometimes the other influence appears to be effective or at least provocative. Having observed in two cases of traumatic porencephaly with epileptic convulsions that long-continued drainage of the lateral ventricle, which communicated with the porencephalic cyst, was attended with a cessation of the attacks, and a like result in a case of traumatic epilepsy, Koche[1] concluded that the increased pressure of the cerebrospinal fluid was of considerable influence in exciting the convulsive seizures, the drainage acting as a regulator for sudden variations in pressure. Similar observations have been made by others, and Stadelmann[2] by means of lumbar puncture found the cerebrospinal pressure in epileptic attack to be 360 mm. of water-pressure. In a series of observations to determine the therapeutic utility of lumbar puncture with relation to the course of epileptic attacks, Nawratzki and Arndt[3] first found the normal cerebrospinal pressure to be in the recumbent posture about 113 mm., and in the sitting posture 400 mm., these results corresponding closely with those obtained by other observers. In three cases of epilepsy the pressure was normal before the onset of the attacks, but at the height of the tonic stage of the paroxysm it increased enormously, fluctuating during the clonic stages, and becoming again normal at the conclusion of the paroxysm. It is, therefore, thought that the increased pressure is not a cause, but rather a result of the convulsion, the tonic spasm causing cessation of respiration, which leads to increased intrathoracic pressure and interferes with the return of blood to the heart. In consequence of this and of the contraction of the muscles of the neck and the compression of the blood-vessels stasis takes place in the veins of the head. Forced expiration, coughing, crying and the like, give rise to similar results. Even simple pressure on the abdomen was capable of inducing increased intracranial pressure. Quite analogous phenomena were observed in the convulsive seizures of hysterical and paralytic patients, although they were the more pronounced in cases of epilepsy.

[1] Deutsche Ztft. f. Chir., Bd. xxxvi, H. 1, 1893.

THE LYMPHATIC CONSTITUTION IN IDIOPATHIC EPILEPSY.

Ohlmacher[1], continuing his studies in the pathology of epilepsy, gives a general survey of 25 cases of epilepsy examined post-mortem, and elaborates still further his observations on the presence of the lymphatic constitution *(status lymphaticus)* in idiopathic epilepsy. He reports five additional—to three previously published—very carefully and ably studied cases of genuine grand mal which presented pronounced evidences of the lymphatic constitution. These five cases include the most typical examples of "idiopathic" epilepsy of nineteen epileptics examined post-mortem. All five met death suddenly and in a state of good general nutrition, resembling in these respects some of the features of the lymphatic constitution. Post-mortem, there was found a persistent thymus with all the evidences of lymphoid activity accompanied with a general lymphatic overgrowth and arterial hypoplasia. Three cases also showed the changes in the bones characteristic of old rickets, and in four there were evidences of morbid changes in the thyroid. From morphologic and clinical reasons, Ohlmacher suggests that there exists a certain relationship between genuine epilepsy and rickets, eclampsia infantilis, thymic asthma and thymic sudden death, tetany, and possibly exophthalmic goiter. As is now known, more or less well-marked and constant hyperplasia of the lymphatic tissues is found in all of these conditions, which are also

[2] Deutsche Med. Woch., 1897, p. 749; Mittheil. a. d. Grenzeb. d. Med. u. Chir. 1897, p. 561.
[3] Berliner Klin. Woch., 1899, p. 662.
[1] Bulletin Ohio Hospital for Epileptics, 1898, I, Nos. 2 and 3.

more or less in touch with each other in many of their clinical manifestations. The exact relations between the anatomic changes in the lymphatic apparatus and the disease mentioned are as yet purely conjectural. In his remarks on this interesting phase of his subject, Ohlmacher seems to lean to the opinion that the neurotic affections mentioned are the result of autointoxications, or other conditions, departing from the changes in the lymphatic tissues. A more extended discussion of this topic from a different point of view would also be very desirable, namely, from the standpoint of the possible secondary nature of the changes in the lymphatic apparatus due, perchance, to the action of various substances present in epilepsy, exophthalmic goiter, etc. It does not appear that we are necessarily bound to assume that the lymphatic constitution must be regarded in the light of a direct or indirect cause of the strange diseases associated with it. Ohlmacher's studies are very interesting, valuable and suggestive, and it is to be hoped that the material and facilities of many other similar American institutions may be put to such good use as is now being made of them at the Ohio Hospital for Epileptics.

THE RIGHT TO DIE.

A presumably learned jurist, a law lecturer in Yale University, has, in an address recently delivered, emitted the opinion that it is wrong to prolong a life in hopeless misery by medical art. He says: "In civilized nations and particularly of late years, it has become the pride of many in the medical profession to prolong such lives at any cost of discomfort or pain to the sufferer or suspense or exhaustion to his family." He asks: "Is not this a misapplication of the healing art?" in other words, are not physicians interfering with a beneficent providence, which, if left to itself, would abbreviate suffering and really make life happier to the surviving? This address has been extensively noticed in the daily press and commented on by physicians, lawyers, and others, and it is satisfactory to see that the ethical instincts of our profession are so firmly upheld in nearly all the parts that medical men have taken in the discussion. One or two points, however, have been perhaps too much emphasized, viz., that we can not say when a disease is hopeless, and that the desire for life is universal. Every physician of any amount of practice must have repeatedly seen cases where the near fatal termination was as certain as a mathematical axiom and others where the desire for death was stronger than the love of life, to say nothing of the vast majority where disease has produced a mental apathy or indifference. In any case, the physician has no question as to his duty, and needs no such excuse to keep him to it. Doctors are not generally accused of being religious, but the ethics of our profession go parallel with the best Christian doctrine in this as in other matters. In only one case reported in the daily press has an alleged physician uttered sentiments in accord with those of the jurist referred to, and the report of his remarks reads like a criminal confession. He has, he says, in hopeless cases given chloroform at the patient's request to shorten his existence. "Suicide," he says, "is justifiable in many cases provided the suicide has no obligations." He has advised suicide and specified the method, though he naively acknowledges he does not know that his advice has been seriously taken. This doctor may be safe in his own state, where the judge referred to presides in the higher courts, but his quoted remarks, if taken seriously, would make him liable to criminal proceedings in some sections of the country. They sound more like the reckless utterances of one who not only lacks principle but has times "when the wit is out," or when his desire to see his name in print overbalances any correct judgment he may possess. It is to be regretted that there is a physician whose ideas even, are based on such pagan principles as seems to be the case here.

TRANSMISSION OF BACILLUS OF TUBERCULOSIS THROUGH THE PLACENTA.

The number of observations definitely showing the transmission of the bacillus of tuberculosis from the mother to the fetus is very limited. Auche and Chambrelent[1] were able to collect 19 cases in which the demonstration of the transmission of bacilli from the mother to the fetus could be considered as satisfactory; to this number they add one of their own. In twelve of these cases there were no macroscopic or microscopic evidences of tuberculosis in the tissues of the fetus, the presence of the bacillus in the fetus having been demonstrated either by means of cover-slip preparations or by means of animal inoculations. In eight of the 20 cases definite histologic lesions were found in the organs of the fetus. This number, which excludes a number of imperfectly studied cases, allows the claim that the transmission of tuberculosis by way of the placenta is rare. The transmission is so much the more to be feared as the tuberculosis lesions of the mother develop rapidly and are widely disseminated. It has never been observed before the fifth month of pregnancy. In the cases where the placenta has been examined it has always been found tuberculous, as shown either by the aid of animal inoculations or by microscopic examination. It seems safe to conclude, therefore, that this tuberculosis of the placenta forms the first stage of the infection of the fetus, the bacilli becoming localized first in the placenta, whence they invade the fetal circulation. As noted, the tissues of the fetus may be infected by the germ of tuberculosis and not present any specific lesions, microscopically or macroscopically. The tuberculous lesions that have existed are most generally disseminated, occurring in all or nearly all of the organs. Rarely the lesions are definitely localized. In the disseminated lesions it is customary to find the bacilli in large numbers, sometimes in extraordinary amounts. In the case of Schmorl and Kockel, where the tuberculous changes in the fetus were localized in the suprarenal capsules, the bacilli were present in very small numbers. It would therefore seem that the fetal tissue cannot be regarded as a poor medium for the development of tuberculosis, and the hypothesis of the latent tuberculosis, as advanced by Baumgarten, and based on a contrary opinion, does not receive any support from the facts brought out by the study of these cases. In the personal observation of these authors an

[1] Arch. de Méd. Exp., 1899, xi, p. 521.

extensively tuberculous mother gave birth to a premature child, which died after about three weeks. The liver, the spleen and the lungs contained a large number of miliary tubercles; the peribronchial and mediastinal glands, and the glands at the hilus of the liver contained caseous tubercles, and the endocardium near the apex of the right ventricle was the seat of a tuberculous nodule about 1 mm. in diameter. This appears to be the first instance observed of a congenital tuberculous endocarditis.

OVERSUPPLY OF MEDICAL PRODUCTS.

Our English brethren are evidently suffering to as great an extent from an overabundance of ready-made medical preparations as we are. And the same determination to crowd the stuff down the throats of the physicians—figuratively speaking, of course—is as much in evidence on the other side as on this side of the Atlantic. Every week or two our English exchanges contain letters crying out against the evil of free samples, of traveling representatives of proprietary drug houses and other evidences of an oversupply of medical preparations. The last number of the *Medical Press and Circular* prints a communication which is unique in that it proposes a remedy. "I say that if a stop be not put to this"—the deluge of medical preparations—"the treatment of disease will be taken out of our hands altogether. The public come to know what is ordered and then proceed to order for themselves," is the way the writer puts it. His remedy is to have a body of experts who shall be appointed and paid by medical organizations. To this body should be entrusted the task of investigating, or superintending the investigation, of every new preparation brought out, and no physician should be allowed to prescribe anything until its precise value should be ascertained by this board. It is, he says truly, mere nonsense to allege that the busy practitioner can investigate for himself, and his certificate, consequently, can not be of the slightest value. While the suggestions sound Utopian and impracticable, and they are to a certain extent, nevertheless it seems as though some action should be taken whereby the physician could have some thing or some body, on which to depend. To make a sweeping assertion that all proprietary and patented products are fraudulent is just as absurd as to accept the say so of the manufacturers that all are good. A few of the newer products are valuable, for progress has been, and is being, made in materia medica and therapeutics, as well as in other branches of medicine. But so much fraud and commercialism is mixed up with this progress that the average physician is at sea. He is losing faith in testimonials, and his experience teaches him that he can not rely on what manufacturers state. These remarks refer not to the "proprietaries" only, but to the synthetics, to the patented preparations. For all the fraud does not rest with the proprietaries any more than all the virtue with the patented products from the fatherland. If some one will rise up and tell us how to get rid of the difficulty he will confer a great blessing on a suffering profession. Our present condition is breeding therapeutic nihilism that is anything but pleasant to contemplate.

Medical News.

DR. L. BREISACHER of Detroit has assumed the medical directorship of the Ypsilanti Sanitarium.

DR. H. P. REICHE, Baltimore, while getting off a street-car, was thrown to the ground and was seriously, but probably not fatally, injured.

FOUR VOLUMES of the report of the Moscow International Congress are about completed, and the remaining three are expected to be ready by the end of the year.

ACCORDING to report, the Board of Health of Nanticoke, Pa., is much exercised over a case now considered to be leprosy. The patient is said to be an Assyrian.

A PARIS exchange mentions that "Breemount's Pride," one of the horses entered in the Auteuil races, has been wearing a tracheotomy tube for some time, and won a prize of $8000 soon after it was first inserted.

DR. J. ACKERMAN COLES, Newark, N. J., has presented to Jefferson Medical College, Philadelphia, a Carrara marble bust of William Harvey, by Horatio Stone; also a bronze medallion lifesize portrait of Abraham Coles, father of the donor, together with a number of other gifts of less value.

AN AUTOMOBILE ambulance is to be presented to St. Vincent's Hospital, New York City. It will be propelled by electricity and will be the first of its kind in the city. The donor's name has not been given.

TYPHOID FEVER has developed in and around the Guerin "fortress" in the Rue Chambroi, Paris. The accumulation of filth and disregard of all sanitary measures by Guerin and his friends are, of course, the cause of the outbreak.

AUGUSTA, ME., is suffering from an epidemic of diphtheria. At last reports seven houses were quarantined, and the inhabitants were considerably wrought up. Springfield, Mass., is also afflicted with the same disease, 37 cases having been already reported.

DR. J. J. SMITH of Chambersburg, Pa., while making investigations in regard to anthrax, which has prevailed in that section for some time, had the misfortune to inoculate himself with the disease. Within a few days an eruption appeared indicating its nature and several days later death ensued.

A RECENT fire in Apothecaries Island, St. Petersburg, destroyed the military drug factory, the chief magazine of military medical stores, whence army supplies were sent out to every part of the Russian empire. The loss, which can hardly be repaired for years, is estimated, in money value alone, at nearly $3,000,000.

A MONTH'S imprisonment and a fine of $200 have been imposed on the dealer in oils who frequented a Paris hospital, calling himself a retired navy medical officer and serving as assistant at times, as mentioned recently in the JOURNAL. He had also obtained several patients as a specialist in throat and ear troubles.

THE MEDICAL department of the University of Denver has been incorporated as the "Denver College of Medicine." The change of name carries with it no change in the relations heretofore existing between the University of Denver and its medical department, other than giving the Denver College of Medicine an independent legal existence.

AN EPIDEMIC of dysentery occurred during the month of August in the State Insane Asylum at Norristown, Pa. During the month there were sixty-six cases, six

of them among the attendants, and seventeen deaths. The disease was reported by the physician of the female department, and it is inferred that it was principally confined to that side of the institution.

DR. S. LEWIS ZIEGLER, of Philadelphia, who has been abroad for the past three months, has returned home. While in Holland he attended the Ophthalmological Congress, which recently met at Utrecht.

DRS. C. A. L. REED, Cincinnati, Bayard Holmes, Chicago, and Wm. Osler, Baltimore, are among those who have returned from Europe during the last week. The latter rented a cottage outside of London, where, with his wife and infant son, he spent most of the summer.

SOME TIME ago the subject of filters for the public schools of Philadelphia came up for discussion before the members of Councils. At the time it was believed that a satisfactory variety had been found, but new developments show that only three out of seven come up to the requirements, and so far none have been selected.

MANY MEMBERS of the Army Nurses' Association, which held its session in Philadelphia during the recent meeting of the G. A. R. were present from various sections of the country. At one of the meetings Miss Clara Barton was present and decorated each member with the insignia of the Order of The Red Cross Association.

TYPHOID FEVER is reported as particularly prevalent in Kentucky towns this fall, especially in those along the Ohio and Kentucky rivers. The health officer of Louisville is reported as saying that there are more cases in that city than he has ever known before, and circulars are being prepared to instruct the public in regard to the disease and its prevention.

A FOCUS of smallpox has been discovered, it is reported, in certain rural districts in Central Illinois, in which, as in the late epidemic in Northern Indiana, some of the local physicians apparently did not at first recognize the disease. In these days of general vaccination, when only modified varioloid is likely to occur, it is probable some cases escape detection, as seems to have been the case here.

REFERRING to the menaced invasion of Europe by the plague, one of the most atheistic, ultrascientific French periodicals remarks that the microbe is answering the question: "Who is my neighbor?" as it is teaching man that it is not a matter of indifference whether he has a neighbor at home or abroad who is poverty-stricken, filthy, immoral or diseased, as poverty, ignorance and filth breed cholera, bubonic plague and what not. The formula for the happiness of the human race, it adds, is in the hands of science, the new religion.

WAR HAS been declared in Europe against rats and mice, as a preventive measure against the bubonic plague. The French Board of Public Health has issued a circular to shipowners requiring the screening of all openings by which rats can enter a vessel, and a protecting appliance fitted on each cable tying it up to the dock. Rats on board must be trapped or poisoned with the preparations sold for the purpose, and carcasses burned. Vessels must be disinfected with sulphurous acid in the haunts of the rats, and elsewhere with mercuric chlorid.

OWING TO the intense heat and humidity which prevailed for several days in the city of Philadelphia during the recent G. A. R. parade, in one day 475 persons were treated, and on September 6 three deaths occurred. During the week of festivities all ambulances were kept busy constantly, and the hospitals were filled to their utmost capacity. That more deaths did not occur was doubtless due to the extreme care exercised by the physicians appointed for the purpose, who had taken the precaution to have at convenient distances ambulances and patrol wagons to give relief in the shortest time possible.

THE THEORY that bacteria are indispensable to digestion has been laid to rest at last by Levin's research in the Arctic regions, reported in *Hygiea*, No. 2. He accompanied the Nathorst expedition and examined the intestines of various birds and animals killed. With the exception of one polar bear and two walruses, the intestines were found absolutely sterile, and in these only a few specimens of the bacillus coli were discovered. Bacteria were found in the water, one colony to 1 c.c., the number increasing with the distance from the surface. The air was found absolutely sterile. No colds nor catarrhs ever occurred among the men.

THE CONTRACT for additional dormitories for the University of Pennsylvania has been awarded, and within a few days ground will be broken preparatory to the erection of a large group of buildings for the accommodation of students. With this addition it is hoped to give the student those private advantages gained at places away from cities, and at the same time be in a position where they may be judiciously obtained. It is proposed to erect a line of buildings extending entirely around the old athletic field. The new dormitories will cost nearly $1,000,000, and are to be finished by August 1, 1900.

REPORTS from Key West, Fla., show that 111 new cases of yellow fever with five deaths have occurred during the five days ending September 12. The total number of cases is 218; deaths, 12. One case was reported from Jackson, Miss., and there was a general exodus to higher altitudes. Quarantine has been instituted against Mississippi City, which reported 13 cases. The marine-hospital service reported one case at Port Tampa City, Fla. A. H. Doty, health officer of New York, has begun the serum treatment on two of the four cases taken from the steamship *Lampasas*. One of the Key West Refugees died at Swinburne Island, September 11.

THE LEPER patient whose death we recorded last week, had been an inmate of the John Hopkins since April, 1897. She had lived in Alleghany City, Pa., and was supposed to have "scrofula" of six years' standing. Her disease was recognized as leprosy on her arrival in Baltimore. The Pennsylvania authorities refused to allow her to return, therefore the hospital was obliged to keep her. With regard to the origin of the disease, it was ascertained that when she was 15 years of age she went to Demerara, British Guiana, and remained there several years. It is supposed she contracted the disease there. The case at one time created much apprehension in the hospital, but as the patient was rigidly isolated, no fear is entertained that any other person has been infected.

JUDGING from the report issued by the State Board of Health of Pennsylvania, smallpox has by no means abated. The report says: Since the disease was first reported in Bedford County in the month of November, 1898, it has made its appearance in 21 counties and more than 100 localities. The number of cases reported has been about 900, and the number of deaths 7. The fact that deaths have occurred is sufficient to exclude chickenpox and impetigo contagiosa. The warning note issued by the State Board of Health some months in advance

of the invasion, pointing out the steady progress of the disease from Florida up along the coast, and calling especial attention to its mild character, might indeed have aroused their suspicions, but does not seem to have been generally regarded.

THE *Chicago Tribune* is publishing a series of excellent articles under the caption "Nineteenth Century Passed in Review." The ninth in the series, published last Sunday, was entitled "Triumphs of Medicine," and was written by Dr. G. F. Butler. The paper is an excellent résumé of the progress of medicine during the century, and, with the illustrations, covers over two pages of the *Tribune*. We should imagine the article as couched in rather too technical language for the average lay reader, otherwise it is worthy of commendation, and certainly ought to help to enlighten those who read it, to the extent that they may see the difference between scientific medicine and ignorant and fanatical charlatanry.

A COMMITTEE on railway sanitation has been appointed by the Wisconsin State Board of Health, which has been giving the subject some special attention of late. This committee proposes to act, if possible, as adviser to the railroad officials, whose duty it is to be ready to receive suggestions as to methods that will improve the service and the safety on their lines. The resolutions under which the committee will act are as follows: That the board appoint a committee to confer with the railroad companies in the state and ask them to improve the sanitary conditions of their passenger cars in the following respects, namely: 1. To provide cuspidors containing disinfectants for all smoking cars and smoking rooms in sleeping cars. 2. To give more attention to disinfecting passenger coaches at the end of each run. 3. That better arrangements be made for the ventilation of passenger day coaches and sleeping cars." The board evidently does not mean to attempt too much, but will use its influence to improve, as far as possible, the sanitary risks of the traveling public.

Correspondence.

Compulsory Notification of Tuberculosis.

LANSING, MICH., Sept. 7, 1899.

To the Editor:—Referring to the paragraph on page 611, of your issue for Sept. 2, 1899, permit me to suggest that isolation of patients and placarding of premises need not follow notification; but notification is essential for any action by the people, that is by the state, for gaining any knowledge of the actual conditions and circumstances under which tuberculosis is spread, and it is for such purposes that the Michigan State Board of Health has taken action; and for the additional purpose of placing in the hands of persons who cough and of their friends some brief suggestions tending to teach the patient how to avoid re-infection and the spreading of the disease to others. Extensive observation at morgues in large cities has proved that even a large proportion of persons dead from other causes have recovered from tubercular disease of the lungs; this means that if a person has such disease in that part of the body only, recovery may reasonably be hoped for; but if the sputa are swallowed, tubercular disease of the bowels and general tuberculosis may result, and death is then probable. The interests of the patient as well as the interests of the public demand that the patient shall be informed of the nature of the disease, and how to avoid re-infection and the spread of the disease. In Michigan, if the patient is thus informed, he, or the householder, hotel-keeper, boarding-house keeper, or tenant, is liable to a fine, and to imprisonment if the fine is not paid, if he *or his physician* does not report the fact of his disease to the local health officer; therefore, in order to protect his patient, or his household, from prosecution, the physician should report the case. And in Michigan, the law provides a small fee to the physician for every such report.

Every sanitarian knows that tuberculosis is spread by the bacilli, and, as pointed out on the same page (611) of your JOURNAL on which is the paragraph on notification, these are liable to be "deposited on the tonsil from the inspired air," and that this disease which causes most deaths is *generally* contracted by inhaling the germs of the disease. Therefore every person should know that there is danger in a room in which there is a coughing consumptive who does not scrupulously care for the sputa.

Every sanitarian knows that vacinnation is almost a certain preventive for smallpox, and that if he is recently successfully vaccinated, as he should be, he is in no danger whatever in "being in a room with a case of smallpox." There should be no impropriety in putting before the public the exact truth on these subjects. Let us have notification of this most important disease, which is now known to sanitarians to be preventable, and which has been decreased by 11 per cent. in Michigan since the State Board of Health has been vigorously working for its restriction.

Very respectfully,

HENRY B. BAKER,
Secretary State Board of Health.

[If notification of cases of tuberculosis were simply for the purpose of obtaining data as to the disease, its spread and possible control, no one could object and every true physician will do what he can to aid in this endeavor. It is different, however, with compulsory and indiscriminating notification, and the Michigan law which requires every patient to be informed as to the nature of the disease and made liable to a fine or imprisonment for not reporting it to the local health officer, appears to us a very harsh and unnecessary one. We repeat, we do not think the time has come for such compulsory notification. The matter can be more safely left to the attending physician. As regards education of the public as to the needed precautions, it certainly should be done, but at the same time exaggeration of the dangers should be avoided. That this has not always been the case is shown by the proposition reported of the authorities in one city to prohibit public funerals of consumptives. We agree with Dr. Baker that there is no impropriety in putting before the public the exact truth on these subjects, but it should be carefully limited to that, and should not include the compulsory publication of the misfortunes of afflicted citizens.—ED.]

London.

(From Our Regular Correspondent.)

LONDON, Aug. 26, 1899.

DANGERS IN MAKING PHOSPHORUS MATCHES.—Dr. Talbot, the medical officer of health for the "match-factory district" of East London, has just made a report on the phosphorus danger which is unexpectedly encouraging. He asserts that yellow phosphorus can be used in making matches with perfect safety, provided certain parts of the process are carried out practically in the open air. He bases this conclusion and change of view on his part on a visit recently made to a factory in his district where 500 hands are constantly employed, and yet where not a single death from necrosis has occurred in ten years, and only two mild cases of "phossy jaw." The secret lies in doing the mixing of the paste and the dipping of the matches on the roof of the factory, under little more than an awning to protect from the weather. The fumes escape so rapidly that no odor even is perceptible.

FEAR OF THE PLAGUE DIMINISHED.—The slight fear of a plague epidemic in England, fanned by the statements of certain "yellow" journals, seems to be rapidly subsiding, as the slowness of the spread of the disease, even in filthy Oporto in manifested. Great vigilance is being exercised by the Port of London Medical Officer, Dr. Collingwood, in the inspection of every Mediterranean and Oriental vessel coming up the Thames, but

so far, fortunately, not a single even suspicious case has been discovered. The plague bacillus actually needs dirt, and plenty of it, as a culture-medium, and can no more spread in its absence than a fish can live out of water. Clean and civilized communities, which means all Europe, outside of Russia, Spain, Portugal, and parts of Italy, have little to fear from it, even if a case be imported. The Portuguese, both lay and official, seem to be doing about what was to be expected—as little as possible—but other governments are taking the situation in hand and sending in experts and serum in self-defense, so that the epidemic seems likely to be "jugulated."

TYPHOID FROM SHELL-FISH.—An interesting instance of probable infection through eating shell-fish contaminated by sewage has just been reported from Exeter. A number of cases of typhoid have occurred within a few days of each other; on investigation, all were found to have been in an excursion party to Exmouth, where they had partaken of the local cockles uncooked. These cockles, it was further found, had been gathered on the bay mud-flats close to an outfall of sewage. As no other source of infection could be found, the connection is decidely suggestive, to say the least, and the authorities of Exeter are justified in demanding the prohibition of any further sale of cockles from this bed.

A MEDDLESOME MIDWIFE.—A remarkably aggravated case of a midwife's ignorance and meddlesomeness has just come before a London coroner. An inquest was held on the body of an infant which had died in convulsions at three days of age. The cause was believed to be "moulding" of the head by the midwife. The good lady actually admitted that she "sometimes did press their little heads into shape a bit," but denied doing so in this case.

Canada.

(From Our Regular Correspondent.)

TORONTO, ONT., Sept. 9, 1899.

CANADIAN ADDENDUM TO THE BRITISH PHARMACOPEIA.—A short time ago, Prof. J. G. Adami, as president of the Montreal Medico-Chirurgical Society, received a letter from Dr. Attfield, dated from the General Medical Council Office, England, with reference to the proposed Indian and Colonial Addendum to the British Pharmacopeia. Dr. Adami at once took the matter in hand and appointed a committee to deal with all suggestions emanating from Canadians along this line. This committee has sought and obtained statistics and information as to what non-officinal drugs, whether Canadian or otherwise, are most in demand. This information has been mostly obtained through the medium of responsible wholesale pharmaceutical houses. Acting also on instructions in Dr. Attfield's letter, they have indicated in their report the methods of preparation and administration of those preparations which have been found most serviceable. So far as suggested, the following are the preparations this committee would have incorporated in the addendum: Elixir simplex, emulsum olei morrhuæ, extractum apocyni liquidum, extractum buchu liquidum, extractum grindeliæ liquidum, extractum hyoscyami liquidum, extractum pruni virginianæ liquidum, extractum tritici liquidum, extractum senegæ liquidum, extractum sanguinariæ liquidum, extractum viburni opuli liquidum extractum viburni prunifolii liquidum, liquor thymolis compositum, oleum gaultheriæ, syrupus acidi hydriodici, syrupus ferri phosphatis compositus, syrupus hypophosphitum compositus, syrupus senegæ, syrupus ipecacuanhæ, tinctura arnicæ flores, tinctura jalapæ composita, tinctura opii deodorata, tinctura sanguinariæ, ferri hypophosphis, hydrargyri iodidum flavum, syrupus hypophosphitum, ferri phosphas solubilis resina laricis, tinctura resina laricis, syrupus ferri iodidi. This draft report contains the information so far gathered and sifted.

HOSPITAL FOR INEBRIATES.—At the recent meeting of the Canadian Medical Association, the committee appointed at the last meeting in Quebec City, Dr. James Thorburn, Toronto; Dr. J. G. Adami, Montreal, and Dr. W. S. Muir, Halifax, brought in a report endorsing a scheme for the establishment of a hospital for the treatment of confirmed drunkards in the province of Ontario. That scheme was outlined in the report of a similar committee which reported at the meeting of the Ontario Medical Association in June last, which advocated the appointment of an inspector of inebriate institutions by the Ontario government. This inspector is, of course, to be a qualified medical practitioner, who has made the medical treatment of inebriety a special study. After his appointment had been made, the inspector should organize in the city of Toronto, a hospital for the medical treatment of pauper inebriates of the more hopeful class, and in the other cities of the province, an inebriate department in the existing general hospitals. In the providing of this treatment, which was to be done in accordance with the tenets of legitimate medicine, alone, no "proprietary remedy" was to be used. Now that this scheme has received the unanimous approval and support of the two leading medical associations in this country, we may expect that the Ontario Government, which has endorsed the scheme, will at once take action on the lines indicated in the Ontario Medical Association's report, and then appoint an inspector to take the matter in charge. In a large measure, the credit is due to Dr. A. M. Roseburgh, Toronto, who now for many years has taken a deep interest in this question; and it was only a few months ago that he was commissioned by the Prisoner's Aid Association of Canada to visit institutions in the United States and also to interview specialists in Canada and the United States with a view of enabling him to formulate a plan for the economic treatment of pauper inebriates.

MCGILL'S NEW PROFESSOR.—The newly-appointed professor of mental diseases at McGill University, Dr. Thomas Joseph Workman Burgess, was born in Toronto in 1849, and was educated at Upper Canada College, where he received numerous prizes. He was graduated in medicine from Toronto University in 1870, winning the University silver medal and the Starr gold medal, and for a year acted as clinical assistant in the Toronto Asylum. In 1875 he became assistant superintendent to the London Asylum for Insane and in 1887 was transferred to the Asylum at Hamilton. In 1890, he was unanimously chosen from a large number of applicants, as medical superintendent of the Protestant Hospital for the Insane, at Verdun, P.Q., an appointment which he still retains. Dr. Burgess is a member of the Canadian Institute, Toronto; an honorary member of the Hamilton Association; a member of the American Medico-Psychological Association; a Fellow of the Royal Society of Canada; a member of the Torrey Botanical Club of New York, and a Fellow of the American Association for the Advancement of Science.

CHRISTIAN SCIENCE FOOLERY.—Some idea of the hold which this doctrine obtains on some mortals is well illusterated by the report of a case from western Ontario. At Beachville, five miles from the town of Woodstock, a woman, the leader of the faddists of that rural hamlet, lost her baby through her foolish conduct. When the child was first taken sick, the mother called no doctor, and as a result the infant rapidly succumbed to the illness. The mother, however, refused to believe that the child was dead, and said that the spirit had merely departed from it, so she locked herself in the room with the little corpse and prayed for a day and a night, when the neighbors ultimately broke into the room, took the child from her and gave it decent burial.

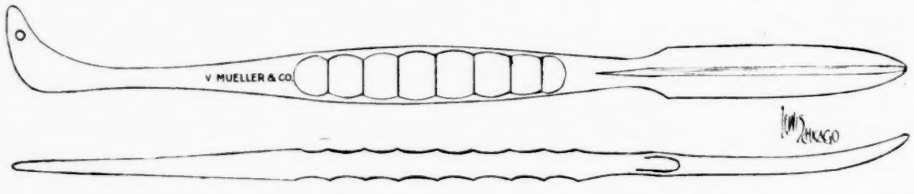
Significance of Nose Bleed as an Early Symptom of Softening of the Brain.—Kompe has observed five cases in which copious, repeated nose bleed was one of the first symptoms of encephalomalacia. He explains it on the same grounds as the cerebral affection: the arteriosclerosis of the blood-vessels of the nasal mucosa.—*Archiv. f. Laryngologie*, viii, 3.

New Instrument.

A Dissector.

BY B. BRINDLEY EADS, M.D.
CHICAGO.

The instrument, a cut of which is here given has been invaluable to the writer in his operative work and doubtless will prove to be a most serviceable one to the general surgeon. All surgeons use some form of blunt instrument, it may be a director, a dissector or the handle of the scalpel, while the instrument here presented combines the advantages of all in one. It is made from a single piece of metal, seven inches in length, consisting of a central portion, the handle and two extremities, one of which is hook-shaped and fenestrated near the end and the other, slightly curved and blade-shaped, has a single longitudinal groove in the center. The latter is used for the isolation of structures located in tissue which can be pushed aside, thus avoiding hemorrhage and keeping the field of operation



dry. This is especially valuable in breaking down adhesions, enucleation of diseased glands, exposure of important vessels and nerves. The single groove serves as a guide for the back of the knife in making the incision and takes the place of the grooved director. Therefore this extremity may be regarded as a combined grooved director and separator of tissues and resembles the well-known Kocher instrument in its construction. When greater force is required in dissection, the hook-shaped extremity is brought into use. The eye acts as a ligature carrier, the blunt extremity of the hook, which can not be forced through the wall of the blood-vessel, makes it a convenient aneurysm needle. The instrument is manufactured by V. Mueller & Co., Chicago.

Book Notices.

MASTERS OF MEDICINE. CLAUDE BERNARD. By Michael Foster, M.A., M.D., D.C.L., etc. Professor of Physiology in the University of Cambridge. New York: Longmans, Green & Co. 1899.

Accident and environment have often more to do with one's life and its successes or failures than most of us are willing to admit. Certainly it was an accident that caused Claude Bernard to take up the study of medicine, and it was the later environments which influenced him to take up the gradually widening investigations to which he afterward devoted his life.

His parents being in moderate circumstances, Claude was given only a fair education, and while yet in his teens he accepted a position with a pharmacist. During his evenings he evidently had time for writing, for after compounding drugs for two years he produced a comedy which was placed on the local stage with more or less success. Stimulated by this he made another attempt. His second effort was a historic piece in the conventional five acts. This completed, he gave up his position in the pharmacy, and with a letter of introduction to the great critic, Saint-Marc Girardin, of Paris, he went to that city. When he presented his letter and manuscript to Girardin, the latter acknowledged that the drama showed its author possessed literary ability of no mean order, at the same time he discouraged the aspirations in the young man and advised him to take up some other calling. "You have studied pharmacy," said the critic; "study medicine, you will thereby much more surely gain a livelihood." And this advice was followed.

No better man could have been selected to write the life of Bernard, the greatest among the physiologists of the past, than Sir Michael Foster, one of the greatest of the physiologists of the present. The history of Bernard is a history of the development of the science of physiology during the thirty-five years previous to his death. Bernard's life and works were so intimately connected with this development that it could not be otherwise. Hence, while the reader will find in this a history of the life of one of the greatest men of the century, written in such a style that it is as fascinating as a novel, at the same time he will find it more a history of the work and the experiments which made our present knowledge of physiology a possibility. Very little of the private life of the man is given. The story of such a life, full of indomitable energy, of unselfish devotion to scientific investigation, crowned with success after overcoming obstacles apparently insurmountable, can not but stimulate those who read it to greater efforts: and also it will bring one to a realizing sense of the fact that the knowledge we have of physiology, as well as other sciences, has come to us without labor on our part, through the most self-sacrificing labors of others.

THE GROSS AND MINUTE ANATOMY OF THE CENTRAL NERVOUS SYSTEM. By H. C. Gordinier, A.M., M.D., Professor of Physiology and of the Anatomy of the Nervous System in the Albany Medical College. With 48 full-page plates and 213 other illustrations. Philadelphia: P. Blakiston's Son & Co.

The anatomy of the central nervous system has of late years become so detailed that few text-books on nervous diseases can give more than a general view of its leading features without sacrificing more space than is desirable. The present work meets the need of a special anatomical text-book devoted to the nervous system. Notwithstanding the recent publication of the translation of Edinger's work, this book will find a place and meet a want. It has an advantage of being originally written in our language and that is not a slight one, when we consider the involved and elaborate nature of its subject. Dr. Gordinier has apparently done his work in a very thorough and satisfactory manner and the book in its present form will be a boon to the student in this department. Confining itself, as it does, to human anatomy it thus gives less chance for confusion and is more readily consulted by the average student and practitioner. For students it certainly has some decided advantages, though as a volume for reference it is inferior in some respects to Edinger's work. We have compared the two for the reason of their almost simultaneous appearance and their identical and kindred subjects.

The illustrations here are largely schematic and for that reason are more instructive; for the most part they appear to leave little to be desired. There is a good index and the make-up of the book is first-class in every respect.

A MANUAL OF DISEASES OF THE NERVOUS SYSTEM. By Sir W. R. Gowers, M.D., F.R.C.P., F.R.S. Consulting Physician to University College Hospital; Physician to the National Hospital for the Paralyzed and Epileptic, Queen Square. Third edition, Revised and Enlarged. Edited by Sir W. R. Gowers and James Taylor, M.A., M.D., F.R.C.P., Senior Assistant Physician to the National Hospital for the Paralyzed and Epileptic, Queen Square; Physician to the Northeastern Hospital for Children and to the National Orthopedic Hospital. Volume I. Diseases of the Nerves and Spinal Cord. With one

Hundred and Ninety-two Illustrations. Octavo. Price net $4.00. Philadelphia: P. Blakiston's Son & Company, 1012 Walnut Street.

This latest addition of Gowers' standard "Manual of Nervous Diseases" will be welcomed by the profession. The changes in the present volume bring it up to the more recent acquisitions in the department of neurology. The author has apparently accepted in full in this edition the later theories of the neuron and has added a chapter on the general constitution of the nervous system, in which the neuron theory and its history are elucidated. The additions are found, moreover, in every portion of the work and aggregate a total of seventy-six pages in excess of that of the prior edition. An appendix on the muscle spindle, by Dr. F. E. Batten concludes the text. The index is only moderately complete, but as this is the first volume this can be made more satisfactory when the finished work appears.

This revised edition of the work will, beyond question, continue its deserved reputation as one of the leading recent manuals of diseases of the nervous system in our language. It is so generally thorough in its treatment of the subjects that the very few places where it might be more full and complete without unduly expanding beyond the normal compass are hardly worth mention. It might be rivaled by other recent publications as a student's textbook, but as a manual and reference work for the practitioner it is unsurpassed.

BULLETIN OF THE OHIO HOSPITAL FOR EPILEPTICS. Vol. I, Nos. 2 and 3. Published by the Hospital: Gallipolis, Ohio.

Excepting a brief introductory with statistics and remarks by the superintendent, Dr. H. C. Rutter, the whole of this number of the "Bulletin" is by the pathologist, Dr. A. P. Ohlmacher. The memoirs are all pathologic reports, fully detailed, with critical discussions of the conditions found, their etiology and relations to the epilepsy in the clinical history. The concluding paper alone, a short one, deals with the comparative pathology of tumors as illustrated by certain marked growths in the lower animals.

One of the most important memoirs here published is that on the lymphatic constitution in idiopathic epilepsy, in which Dr. Ohlmacher maintains his views previously published on the importance of persistent thymic and general lympathic hyperplasia as having a probable morphologic and casual relation to the disease. In this publication he reports five cases—additional to those previously published—of genuine *grand mal*, presenting the anomalies mentioned above, and being the most typical examples of idiopathic epilepsy out of nineteen epileptics examined post-mortem.

In all respects the "Bulletin" is a credit to the institution and to the state that gives it its support.

ARCHIVES OF NEUROLOGY AND PSYCHOPATHOLOGY, Vol. I, No. 4. 1898. State Hospital Press: Utica, N. Y.

This issue of this scientific medical serial is practically a monograph on acromegaly, one hundred and ninety-four of its two hundred and fifty pages being devoted to the subject. The principal article, that of Dr. Harlow Brooks, is noticed editorially in this issue of the JOURNAL, and further mention of its contents can therefore be dispensed with here.

The other memoirs are, one a collateral subject, the distortion of the optic chasm in a case of acromegaly, by Dr. Ward Holden; one that might be considered in a sense collateral, on the normal dimensions of the pituitary fossa by Dr. Ales Herdlicka, and one, a preliminary psychologic study of a case of amnesia. The issue is a valuable one and maintains the standard set in this publication.

TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY. Edited by the Secretary. Twenty-first annual meeting held at Syracuse, New York, Aug. 30, 31 and Sept. 1, 1898. Volume XX. Lincoln, Neb. Issued May, 1899.

This handsome volume of transactions contains several papers of medical interest, some of which have already been noticed editorially in the JOURNAL. Still other short medical papers are those on "The Micrometry of the Human Red-Blood Corpuscles," by Frank Judson Parker; "On Feeding Some Insects with Cultures of Comma or Cholera Bacilli," by R. L. Maddox; "Questions in Regard to the Diphtheria Bacilli," by M. A. Veeder, and "Medical Microscopy," by A. A. Young. There are, of course, the lengthier memoirs on biology and natural history themes with elaborate illustrations. The volume is, on all these accounts, evidently a valuable contribution to scientific literature.

Deaths and Obituaries.

W. N. AYERS, M.D., of Wichita, Kans., died at the home of his son, in that city, August 30, aged 88 years. Dr. Ayers was also an ordained minister of the Presbyterian Church, and was at one time a member of the Illinois legislature.

THOMAS J. DOUGLASS, M.D., died at his home in Ottumwa, Iowa, September 2, aged 72 years. He was graduated from the University of Pennsylvania in 1853 and from Western Reserve College in 1854, and began practicing his profession in Ottumwa in 1855. He was president of the Wapello County Medical Society and a member of the DesMoines Valley and the Iowa State medical associations.

JOHN M. GRAY, M.D., of Noblesville, Ind., died at the home of his daughter, in that city, August 28, aged 63 years. He was surgeon of the 39th Indiana during the Civil War, and distinguished himself by the skill and success of his work.

JULIUS HALL, M.D., University of Maryland, 1841, of Upper Marlboro, Md., died at the home of his daughter, in that city, September 4, aged 80 years. He had been a practitioner for over 57 years.

GEORGE W. KING, M.D., Pendleton, Oregon, died August 23, of cerebral embolism. He was a graduate of the Ohio Medical College, and a prominent medical figure in the Pacific northwest. He was 55 years of age.

AUGUSTUS DELOFFRE, M.D., surgeon and major U. S. A., died September 3, at Fort Sam Houston, San Antonio, Texas. He was born in France and was appointed from Louisiana in 1874. His last post was the U. S. Barracks, Columbus, Ohio.

M. A. MOSHER, M.D., Austin, Ill., died September 12, aged 80 years. He was graduated from the University of Michigan, and had practiced medicine at Appleton, Berlin and Milwaukee, Wis. During the Civil War he served as surgeon in the 20th Wisconsin Infantry.

TIMOTHY H. O'NEILL, M.D., of Providence, R. I., a graduate of Maynooth College, Dublin, and of the New York Medical College, died at his home, August 29. He was at one time surgeon-general of the 5th Battalion of Infantry, Rhode Island regiment.

MATTHIAS J. PENNYBACKER, M.D., died in Philadelphia, August 29, aged 48 years. He was an alumnus of the University of Pennsylvania, class of 1876.

JOHN H. TILFORD, M.D., Windom, Minn., died September 7, after an operation for appendicitis. He was graduated from the Northwestern Christian University (Butler College) and the Indiana Medical College. He served through the Civil War as assistant surgeon of the 79th Indiana.

J. F. WADE, M.D., College of Physicians and Surgeons, Baltimore, 1884, of Arlington, Neb., died in that city, September 3, of heart failure. He was surgeon of the Fremont & Elkhorn Valley R.R.

WILLIAM F. TROUT, M.D., of McConnelsburg, Pa., died in that city from the effects of gangrene, September 7, aged 66 years. He was graduated from Jefferson Medical College in 1856, and was a surgeon during the Civil War. He also practiced for several years in Egypt and Palestine.

P. M. HOBBS, M.D., of Wymore, Neb., September 4.... Webster B. Johnson, M. D., of Savanna, Iowa, August 31, aged 25 years.

....Robert J. McClure, M.D., of Sandy Lake, Pa., September 3, aged 68 years....William Rubey, M.D., of Macon, Mo., August 31....Arnold Vogt, M.D., of Fort Madison, Iowa, September 2, aged 90 years.

DEATHS ABROAD.

S. HERXHEIMER, M.D., a prominent dermatologist of Frankfurt, Germany....F. Gonzalez del Valle, professor of surgery at Havana for over sixty years....H. Klotz, professor of gynecology at Innsbruck.

Miscellany.

Mechanics and Physiology of Bicycling.—The chief advantage of bicycling over gymnastic exercises, according to Siegfried of Nauheim, is that it develops the attention and innervation, and this central activity is of a great hygienic and therapeutic value.—*Deutsche Med. Woch.*, No. 33.

Fatal Hemorrhage from Lesion of an Intercostal Artery.—The artery at the point of the injury (stab) was only .5 mm. in diameter, but the aspiration of the blood at each expiration prevented the formation of a clot and led to fatal hemorrhage, the first case of the kind on record. Suture of the pleura would probably have prevented the infrapleural effusion.—*Beitrage z. klin. Chir.*, xxii, 2.

Jejunostomy.—Maydl claims that the indications for jejunostomy are as comprehensive as for gastroenterostomy, and he prefers it in case of ulcus ventriculi and duodenal stenosis. He adopts Kunn's suggestion of a Y-implantation of the central in the peripheral end to control the bile and pancreas secretion. Twenty-two cases are tabulated in the *Mitth. a. d. Grenz.*, No. 4.

Injury to Abdomen Without External Wounds.—Eichel concludes, from the study of several observations, the urgent necessity of the immediate transportation to the hospital of every person injured in the abdomen, even without external wounds, without waiting for the classic symptoms of peritonitis. The case can then be supervised and operated on as soon as the pulse increases out of proportion to the body temperature.—*Beitrage z. klin. Chir.*, xxii, 1.

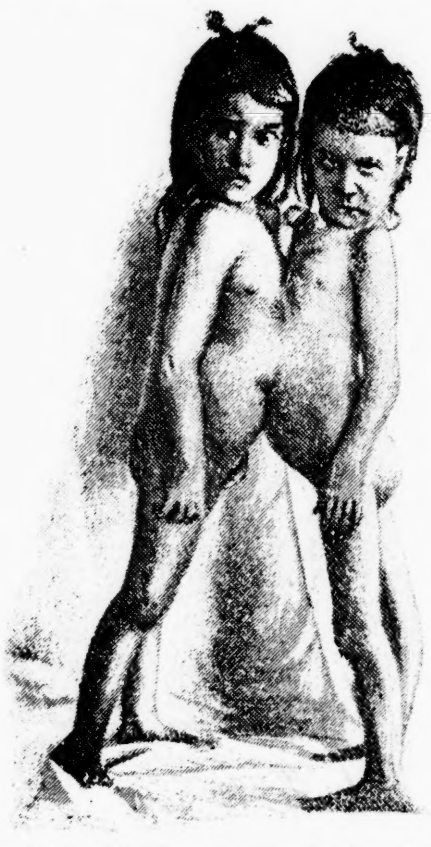
Extrauterine Pregnancies.—A patient succumbing to peritonitis in the supposed sixth month of pregnancy was found to have a fetus 51 cm. long, in the left tube, surrounded by evidences of a fetus developed to term in some previous pregnancy, macerated and partially absorbed. As this left tube showed no traces of a corpus luteum, and as its connection with the uterus was entirely obliterated, the fecundated ovum must have been derived from the right tube.—*Arch. f. Gyn.*, lviii, 1.

Philadelphia Mortality Statistics.—The number of deaths occuring in Philadelphia during the week ending September 9 was 405, a decrease of 132 over the corresponding week of last year and an increase of 69 over that of last week. The principal causes of death were: Apoplexy 17, nephritis 24, cancer 11, cholera infantum 29, tuberculosis 59, heart disease 29, pneumonia 17, septicemia 6, suicide 4, sunstroke 1; infectious diseases: typhoid fever 7, diphtheria 15, cerebrospinal meningitis 1.

Physiology of the Handwriting.—Recent research by Javal has established that the most rapid and even handwriting, written with the least effort, is obtained with the paper sloping to the left at about the same angle as the slope of the handwriting, the wrist making the motions rather than the fingers, the arm pivoting on the elbow, each line thus an arc of a large circle, and no dots or crosses inserted until the page is reread. He adds that physiology sheds a bright light on expert study of the handwriting. The advantages to be derived from a sloping handwriting were divined from the earliest ages, as evidenced for instance, by the famous "Mesa Stela" in the Louvre.—*Bulletin de l'Academie de Med.*, July 18.

Predisposition to Infection Induced by Lesions of the Tissues.—Extensive experimental tests of the influence of ligatures, crushing the tissues and other injuries, on the development of bacteria introduced into wounds at Tavel's bacteriologic institute at Berne, have resulted in establishing the advantages to be derived from moist asepsis in treating wounds, and the necessity of avoiding ligatures of muscles and crushing of the tissues during operations. Tetanus spores introduced into wounds did not produce infection, unless the muscles had been ligated, in which case the disturbances in the circulation favored the germination of the spores and development of the bacilli.—*Cbl. f. Chir.*

United Twins.—An unsuccessful attempt has been made to separate the six-year-old "Rosalina and Maria Sisters," the interesting case of xyphopagism mentioned in the JOURNAL of August 12. We also reproduce an etching of the twins from the *Brazil Medico*. Repeated examinations in medical circles had convinced every one that the twins were distinct and could easily be separated. Radiographs, after ingestion of bismuth, enabled the entire alimentary canal to be traced in each as in



a normal subject, while the connecting band cast no shadow. But the incision revealed a peritoneum in common and a single continuous liver, forming a flattened lobe 4 cm. thick and 10 cm. wide occupying the second upper quarter of the connecting band. There were no indications of a septum of any kind, and intervention by operation was abandoned. In other respects the organs of each were found apparently independent. The twins move around easily, one walking backward, but can only lie on one side with comfort.

Seasickness.—A physician on one of the North German Lloyd steamers has contrived an apparatus to register the movements of the ship, described in the *Wiener Klin. Woch.* of July 27. It records that the ship sometimes rose perpendicularly a distance of 13 meters, at times as rapidly as 2 meters in a second. Ach, the inventor, considers seasickness

a functional affection and that it only occurs when the motion of the ship forms an element in the consciousness. The immunity of infants and the lesser predisposition of the aged, its absence during profound sleep, and also the fact that the seasickness is forgotten in moments of great danger, tend to establish the functional character of the disease.

Prevention of Suicides.—Hauviller states that in his thesis (Paris, 1899), that material causes only indirectly produce the loss of psychic balance, which is the direct cause. Rich or poor, the first step is a sense of loneliness, of isolation, and association of any kind is the most effective means of combating the tendency. Family, religious, social associations all prevent the idea of self-destruction, and the stronger the ties the less it occurs. There are fewer suicides among the Jews than among the Roman Catholics, and fewer among them than in Protestants. In the army there are more among the petty officers than among the privates. Political crises lower the number of suicides as men are drawn into closer fellowship with each other.

Favorable Effects of Alkalinization.—Injections of sodium salts were made by M. M. Charrin Guillemonat and Levaditi very gradually in a series of experiments on rabbits and kept up a long while. Another group were injected with acids. All were then inoculated with pyocyaneus cultures. The control-animals died in three days; the acid animals in eighteen to forty-eight hours, while the alkalined survived several days and the injection was much less intense in every respect. The alkalines evidently modified the soil in favor of the defense.—*Progrès Med., August 5. (Soc. de Biologie.)*

Double Stars of Medicine.—Janus has an interesting article on members of the profession who have become so distinguished in other branches of learning that the medical aspect has been eclipsed. Rabelias and Schiller in literature, Erastus and Servetus in theology, Averroes and Locke in philosophy. The latter name is a surprise and the article quotes at length from some unpublished MSS. in the British Museum to show that this intellectual ruler of the eighteenth century was an Oxford bachelor of medicine, physician to the Earl of Shaftesbury and others, and constantly compiling medical notes and suggestions.

Surgical Treatment of Epilepsy.—Contrary to most writers, Schär advocates intervention always when internal, dietetic measures have failed to afford relief in a brief space of time. The inmates of epileptic asylums should be examined occasionally by a surgeon to decide which cases promise a successful operation. His conclusions are based on the results in Kocher's clinic, and he claims that an injury of the skull properly treated never determines epilepsy. Abstinence from alcohol is imperative and even for persons who have suffered trauma of brain or skull, with no evidences of epilepsy.—*Archiv. f. Klin. Chir.*

Therapeutic Utilization of Salivation.—Von Leube had his attention called to this subject by a case of enormous ascites which spontaneously retrogressed and was eliminated in the saliva that attained an amount of three liters in the twenty-four hours, and 300 to 1000 c. c. were secreted daily for some time, with no recurrence of the ascites. Applying this experience to several cases of pleuritis exudativa, he ordered the patients to chew on rubber tablets, and thus induce a copious salivary secretion. In 4 cases out of 5 the effusion was absorbed, and once in 2 cases of ascites. He therefore advocates alternating or combining ptyalysis with diuresis and diaphoresis when other measures fail.—*Muenchener Med. Woch., August 15.*

Fish Eater's Tuberculosis.—This is the name suggested for leprosy by Jonas Hutchinson, who attributes the disease to excessive fish diet, and believes that it will disappear when cereals, potatoes and meat take the place of the salt fish. Except under special conditions it never occurs in inland districts. It is especially prevalent in Roman Catholic countries, he states, which impose a fish diet on fast days. The Greek church forbids fish as well as meat, and leprosy did not follow the church into the interior. Hutchinson's theory meets with so little acceptance among physicians that he is now appealing to the general public.—*Journal of Tropical Medicine,* June.

Alcohol and Legal Responsibility.—If a person under the influence of liquor is in a condition of health, he is responsible; if in a condition of disease, he is not responsible. This is the key to the question according to De Boeck, president of the Belgian Society of Mental Medicine. Where it is impossible to absolutely decide the pathologic or non-pathologic condition, attenuated responsibility must be admitted. A person under the influence of liquor is intoxicated and hence not normal. But alcoholism being so frequent, it has become "normal" as it were, and the problem is to decide whether the reaction to the alcohol is normal or not. Unconsciousness and amnesia are important symptoms of normal drunkenness, but opinions vary as to the degree necessary. He does not consider it necessary that they should be complete, nor that the soil should be prepared by a heredity taint, to produce pathologic intoxication. The fact of having taken but a small quantity of alcohol should not be considered a necessary indication of pathologic intoxication, nor should the benefits of irresponsibility be refused to those who have taken large quantities.—*Revue Med.,* August 2.

Russian Congress to Arrest the Spread of Venereal Diseases.—The official summary of the reports and measures proposed at this conference in 1897, has just been published in German in a special number of the *Derm. Ztft.* The tendency of the seventy measures advocated is for stricter control of prostitution, ample gratuitous facilities for treatment of venereal diseases, with especial employment and diversion for prostitutes kept in the hospitals for treatment—"a prominent field for private benevolent efforts"—examination of male visitors to brothels if possible, and opportunities for post-graduate courses in venerology. A medical certificate of the absence of any contagious disease should be required of servants and factory employes on entering and leaving service. The reports show that in the smaller towns extragenital infection is the rule instead of the exception. Introduction of a uniform nomenclature and schema for registering cases is urged.

Deaths in Michigan During August.—There were 2755 deaths in Michigan during the month of August, corresponding to a death-rate of 13.8 per 1000 population. This number is 356 more than the number registered for the preceding month, and is also about 300 more than the number registered for the month of August, 1898. There were 703 deaths of infants under 1 year of age, a marked increase, due to the prevalence of diarrheal diseases, from which cause there were 501 deaths reported, as compared with 265 in July. There were 296 deaths of children aged 1 to 4 years and 551 deaths of persons aged 65 years and over. The number of deaths from certain important causes of deaths were as follows: Pulmonary consumption 145, other tubercular diseases 53, typhoid fever 50, diphtheria and croup 22, scarlet fever 9, measles 7, whooping cough 34, pneumonia 82, diarrheal diseases under 5 years 501, cerebrospinal meningitis 45, cancer 112, accidents and violence 193. There is no marked increase in mortality from any other cause than diarrheal diseases, with the exception of slight rises of typhoid fever and whooping cough.

Women Doctors in Russia.—The *Philadelphia Press,* in a recent article, gives an interesting account of the history of women doctors in Russia, the earliest accounts of which began about twenty-five years ago. It is stated that owing to the lack of facilities which existed in that country many young

women pursued their course of instruction in Zurich, but owing to the trend of liberalism which existed throughout Russia in the sixties a medical college for women was founded in St. Petersburg in 1873. At this time much opposition was encountered and the idea was combated on the ground that such condition tended toward disintegration of the family, and was opposed to the public morals. The school was an annex to the regular military medical college and the girls were admitted on the same footing as boys, each of whom required a course of instruction extending over a period of five years and passed the same examinations, but in the case of the girls the full title of physician was not granted. At the university the women students were regarded by their male comrades as equals, and, as an example of the friendship that existed between them, the following is told: One of the female students was in need of a book on anatomy and was overheard by a male companion, unknown to her, but who at once said: "I'm sorry not to have one myself, but if you wait a moment I shall surely get one for you," and a few moments later appeared with several copies loaned by her friends, and on presenting them he said: "Take whichever one you like best; take even several, if you know of others of your classmates that may be in need of them." At the time when the first girl students were to pass their final examinations war between Russia and Turkey broke out. Russia had hardly sufficient physicians; the fourth and fifth year students of the Military Medical School were ordered to the battlefield. The girls seized this opportunity, eager to prove their capability to perform the functions of physicians, and during the war the Russian women physicians made themselves generally known and turned public opinion in their favor.

Mosquito Origin of Malaria.—Bignami now asserts that the *Anopheles pictus*, as well as the *claviger*, serves as a host for the crescent-forming parasite.—*Annali de Med. Na.*.

Pennsylvania Examinations.—The result of the recent examinations before the Pennsylvania State Board of Medical Examiners was as follows:

Colleges.	Examined.	Failed.	Percentage of failures.	General Average
University of Pennsylvania	143	1	00.7	86.00
Women's, Philadelphia	28	0	00 0	81.22
Medico-Chirurgical	93	15	16.3	79.94
Western Pennsylvania	46	7	15 2	79.01
Jefferson	34	3	08.8	78.24
Miscellaneous	74	22	29.7	76.31
Baltimore Medical	7	4	59.1	72.84
General average	425	52	12.2	80.04

Quinin in Malarial Hemoglobinuria.—The JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION bemoans the fact that it still reads the "assertion" that the administration of quinin in malarial hemoglobinuria aggravates the "symptom," and then *asserts* that very few practitioners in the malarial districts believe that quinin will produce this condition. The JOURNAL, by rules of logic which are naive, to say the least, says: "Why the hemoglobinuria of malarial origin has been singled out among all the other varieties and stated to be increased by the use of quinin, is not clear. Thus we have: 1, paroxysmal hemoglobinuria, and 2, toxic hemoglobinuria, including that due to chlorate of potash, carbolic acid, naphthol, carbon dioxid, and the poisons of infectious fevers, etc." It says further: "The bright red urine observed is not always a hematuria—in fact, a hematuria is the rare exception, for hemorrhages, of whatever nature, are uncommon in all varieties of malaria."

It is very easy to sit on the editorial tripod on the shore of Lake Michigan and, in the above *ipse dixit* style, dictate to experienced men how they should treat a "symptom," of which the editor shows his ignorance by calling it such. Malarial hematuria—one term is as good as another, since both are incorrect—is a pathologic entity, with a symptom-complex all its own. To place it in a category with other conditions which also have one of the symptoms does not strike the ignorant swamp doctor as good logic.

Now, to begin with, the form of malarial fever accompanied by bright-red urine, we denominate hemorrhagic malarial fever. There is a distinct hemorrhage, and it is most effectually treated with quinin, and rationally so, because the malaria is in an active form and requires the classic remedy for its removal. Not so in the other condition; here the bulk of the color is due to methemoglobin, the urine is black or the color of port wine, and, the JOURNAL to the contrary notwithstanding, there is always some blood present. In this condition the malarial organism is either already absent or is rapidly disappearing from the blood.

The symptoms of icteric methemoglobinuria of malarial origin are about as follows: After a variable history of previous intermittents, treated *with* quinin, the patient is suddenly taken with a chill, lasting from a few minutes to an hour, the thermometer indicating from 101° to 106°, usually about 103°. This is followed by no increase of temperature and absolutely no sweating. After a short time, from a few minutes to an hour, the patient will pass, with great vesical tenesmus, from 30 to 300 c. c. of dark-colored urine; if the quantity is small it is inky-black, and the prognosis is bad. The urine is highly albuminous, and contains a variable number of blood discs, mostly bleached out; the specific gravity is from 1025 to 1040. If the patient is still under the influence of quinin, a second or third rigor may appear, without any periodicity, and each additional dose, with mathematical precision, will bring on a paroxysm, and each paroxysm is followed by darker urine, but if no more rigors appear it will gradually clear up. The patient has an anxious facies, rapid, sighing respiration, a rapid, feeble pulse, and more or less nausea. In from six to ten hours after the onset, active vomiting appears, which is projectile, the skin becomes markedly jaundiced (darker than obstructive jaundice), the bowels are obstinately constipated, and the shock becomes more marked. The blood in the beginning may contain from three to four million red cells, some plasmodia, and there may be seen some phagocytosis. In twelve hours the count may be one and a half million, and the plasmodia may have disappeared; even at the autopsy they may be absent in the internal organs.

In favorable cases, after sharp elimination, all the symptoms gradually disappear, the stools, which were at first black and tarry, become lighter and of a golden-yellow color, the urine is voided frequently, becomes more dilute, and contains epithelia and all kinds of casts. In fatal cases the rigors continue, the patient becomes delirious, suppression sets in, and he dies with "uremia." Or, there may be amelioration of symptoms, but with suppression, the patient will feel well and will not believe that he is certainly doomed, and may live eight days after complete suppression. In some few rare cases the plasmodia may persist and give rise to a febrile movement; in such we use methylene blue, some preferring sodium thiosulphate.

Now, the writer will tell the learned editor of the JOURNAL a secret; he has never seen a case treated with quinin recover; on the other hand, by the eliminative treatment the majority of cases make a rapid recovery. This is no editorial bombast, but can be attested by thousands of swamp inhabitants. If a malarial infection is promptly and scientifically treated with quinin this peculiar disorder can be positively prevented, but the dilatory and improper use of it in the face of a malarial cachexia will certainly bring on an attack of methemoglobinuria in a susceptible individual.

The writer has seen several cases of quinin methemoglobin-

uria: it has no existence apart from malarial cachexia. The editor of the JOURNAL can find any number of such cases in the Mississippi Valley, provided he has money enough to induce a subject to take a dose of quinin; they generally take arsenic. It seems to be a chronic condition. We admit that we do not understand it, but know, however, that in chronic malaria the hemoglobin percentage falls after quinin is exhibited, just like the pulmonary effect of a mercurial inunction in secondary syphilis.—*The Memphis Lancet.*

The Value of a Medical Defense Union.—We have referred several times of late to the great advantages of a medical defense union for the protection of the members of the profession against blackmail, charges of professional incompetence, etc. A case which has recently occurred in England emphasizes the value of such a league in so marked a manner that we can not refrain from laying the gist of it before our readers.

Dr. Kidd, a medical man in practice at Bromsgrove, whose diplomas of M.B., London, and F. R. C. S., England, mark him at once as a physician of standing, was the medical officer of the Bromsgrove sanitary district, and also of the joint isolation hospital established for the three sanitary districts of Bromsgrove, Redditch, and Droitwich. On Sept. 17, 1898, a member of the Bromsgrove urban district council made a public allegation, according to the *Lancet* for August 12, that a "patient was in the hospital one week and three days and never saw the doctor once, and all the six weeks and three days she was there she never had one drop of medicine." Further, according to the *Lancet*, it was alleged that, although a patient (a little girl) was in great agony for two days, the medical officer did not see her, and that she was frightened by a threat of being put into "boiling blankets" to make her keep quiet in bed; that the medical officer actually ordered this treatment, and that the girl died while undergoing it. Moreover, it was stated that "men, women, youths and boys and girls had to eat, drink, lie, and sleep all in one room;" also that the hospital was so badly constructed that rain came into the building, and that the wind could be felt by the patients as they lay in bed.

The facts of these allegations appear to have been that the patient in the first case "was admitted (into hospital) at a late stage of the diseases, that convalescence was not interrupted, that she required no medicine, that it was not true that Dr. Kidd did not see her for ten days after her admission, and, further, it was shown that she was the defendant's aunt. The little girl was niece to the woman already mentioned. Nephritis set in as a complication of scarlet fever and she died from uremia. A hot-pack was ordered as a means of treatment—hence the statement about 'boiling blankets'—but the disease was too far advanced for it to be of any avail. It was also proved that Dr. Kidd was indefatigable in his attendance on the patients. The hospital was only a temporary one—a hospital marquee tent with double canvas walls. It was well ventilated, but when there was heavy rain the water trickled down in one or two places, the beds, however, being carefully removed from the damp. The patients were mostly young children, but while the woman already referred to was an inmate there were two boys as patients, about fifteen or sixteen years old. They occupied the same large tent, but their beds were thoroughly screened off from the other beds and Dr. Kidd had heard no complaints."

It is easy to see how such charges may have arisen without malicious intent, and it is still more easy to comprehend how they might form a serious basis for malicious persecution.

It so happened that, according to Dr. Kidd's letter, published in the same number of the *Lancet*, he became a member of the Medical Defense Union five years previously, little thinking that he was himself likely to become involved in litigation. But suddenly there came upon him these damaging charges of gross professional incompetence and negligence; charges which, as he says, he certainly would have been unable to deal with adequately on his own slender resources. He sent the facts to the secretary of the Medical Defense Union, and at once received a most careful and exhaustive letter of advice from their attorney, followed by an eminent counsel's opinion. The union subsequently took the case off his hands, bringing an action for libel against the author of the charges, entirely vindicating Dr. Kidd's character, disproving the allegations in detail, and obtaining for Dr. Kidd a verdict for £150, the foreman of the jury taking care to explain that it was only the defendant's pecuniary position which prevented them from assessing much heavier damages against him.

It is not only the cost of the proceedings, when an incriminated physician has either to defend himself against malicious or otherwise unjust action, or to vindicate his character against slanderous statements by bringing suit himself against their author—a cost which must inevitably be considerable even though he gain his case; but it is the wear and tear, the sleepless nights, the worry and anxiety, the unfitness for good work which comes from being in a state of tension, which are also saved to him by his membership in such a union. On this point Dr. Kidd says:

"During the six months over which the action was pending, the whole of the work connected with the case was taken off my hands by the solicitor to the union, without the slightest trouble to myself, and I need scarcely have been aware that I was involved in any proceedings at all; but the work was being done nevertheless with an amount of skill and care and unwearied labor which it would be impossible to praise too highly, and which could not have been exceeded if I had been the most wealthy and exalted client in the land, instead of a humble country medical man. When I think," adds Dr. Kidd, "of what the union has done for me in this trying case and of what I should have suffered without its powerful and kindly aid, and when I reflect that such advantages are open to every member of our profession at the cost of 10*s.* 6*d.* yearly, it becomes a matter of surprise to me that the membership roll of the Medical Defense Union is not identical with the *Medical Register and Directory*."

In addition to these considerations, the fact must not be lost sight of that the existence of such an association would act as a strong moral power in checking ill-advised and unwarrantable actions against physicians; for not only would the knowledge that the physician had the association at his back act as a deterrent, but further, the necessary preliminary examination of his case by the union before espousing his cause would of itself testify that he stood well with the profession, and be, moreover, a presumptive cause for his assailants to expect failure.

In this country, we believe, slanderous charges are more prevalent, actions for malpractice more common, and attempts to extort blackmail from physicians more frequent than in almost any other. We are constantly reading accounts of such in medical and lay journals. It does, therefore, seem extraordinary that no organized effort of any magnitude or universality exists in this direction; and while we question if it would be wise to impose upon the AMERICAN MEDICAL ASSOCIATION additional functions of a nature so divergent from those with which it is at present fully occupied, we do think that the initiative in organizing such a league might, owing to the far-reaching influence of the ASSOCIATION, wisely take its rise from that body. But from whatever direction it comes, we would urge that such a league be formed, and that it be national, with state branches, and not so many isolated state leagues. For the principle of the stronger helping the weaker will apply as much between one state—or all the states—and another as between individual medical men.—*Editorial N. Y. Medical Journal*, September 9.

Christian Science Legal.—Attorney-General Akin has rendered an official opinion to the effect that the treatment of disease by so-called spiritual or mental methods is not an offense under the criminal code of Illinois. This is an additional reason why the next legislature should pass a law forbidding such treatment for infants or children. A man or woman who has reached years of discretion is supposed to be a competent judge as to what treatment he or she shall have in case of illness. If some adults think they can get any benefit from Christian Science, or mind cure, or the prayers of Dowie, they have a right to risk their lives under this sort of treatment if they so desire. But small children should be protected from the ignorance or charlatanry that deprives them of skilled medical treatment in case of dangerous illness. Whatever virtue there is in mental or faith cures arises out of the faith of the patient and the power of autosuggestion. Infants can get no benefit from these methods.—*Chicago Tribune.*

Queries and Minor Notes.

THE TUBERCULOSIS CONGRESS.

KANSAS CITY, MO., Aug. 28, 1899.

To the Editor:—Can you inform me where I can obtain the Proceedings of the recent Tuberculosis Congress in English. The information will be appreciated. J. C.

ANSWER: The JOURNAL is not aware of any publication of the proceedings of the recent Tuberculosis Congress in English other than the abstracts given in correspondence and otherwise in the medical periodicals. We presume such publication will be made. Probably some of our readers may be able to enlighten our correspondent, as well as us.

BILIARY CALCULI.

EVANSVILLE, IND., Aug. 31, 1899.

To the Editor:—I wish to put on record a case of biliary calculi that came under my observation and was operated upon by me July 15, 1899. The gall-bladder contained 331 distinct calculi, the largest as large as a good-sized marble, and the smallest as large as a grain of wheat. I have not seen or heard of a case with so large a number of stones. Perhaps you or some of the JOURNAL readers have, if so I would like to know it.

A. M. HAYDEN, M.D.

The case of our correspondent is certainly of interest, but not unprecedented. Others of equal or greater numbers have been published; for example, Meisenbach's of 1100 calculi, in the *Medical Mirror*, 1895, vi, p. 92. Naturally, with these excessive numbers the calculi must be very small, and some of them may have been counted that were not nearly so large as the smallest mentioned by Dr. Hayden, "as large as a grain of wheat," and that would have been overlooked by other observers.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including Sept. 7, 1899:

Lewis Balch, major and surgeon, Vols., from New York City to San Francisco, Cal., for duty in the Department of California.

William E. Borden, captain and asst.-surgeon, U. S. A., member of an examining board in Washington, D. C., vice Major William F. Lippitt, Jr., surgeon, relieved.

Robert Boyd, acting asst.-surgeon, leave of absence extended.

Louis Brechemin, major and surgeon, U. S. A., from duty in Porto Rico to post duty at Fort Logan, Colo.

George L. Cable, acting asst.-surgeon, from New York City to Athens, Ohio, for annulment of contract.

Christopher C. Collins, lieutenant and asst.-surgeon U. S. A., sick leave extended.

John B. Darling, acting asst. surgeon, to temporary duty at Fort Snelling, Minn.

William B. Davis, major and surgeon, U. S. A., leave of absence extended.

John Ryan Devereux, acting asst.-surgeon, leave of absence granted.

Marion O. Fulcher, acting asst.-surgeon, from Waynesboro, Ga., to duty at Camp Meade, Pa.

William W. Gray, major and surgeon, U. S. A., relieved from further station at Fort Huachuca, Ariz.

Philip F. Harvey, major and surgeon U. S. A., member of an examining board in San Francisco, Cal., vice major E. B. Mosely, surgeon, relieved.

George L. Hicks, appointed lieutenant and asst.-surgeon, Vols., August 17, 1899, and assigned to the 38th Inf., Vols.

Aubray F. Higgins, acting asst.-surgeon, from Germantown, Pa., to Governor's Island, N. Y., for duty in the Department of the East.

John Sturgeon Hill, acting asst.-surgeon, from Allegheny, Pa., to San Francisco, Cal., for duty in the Department of California.

D. J. Johnson, acting asst.-surgeon from duty with the 47th Inf. Vols. at Camp Meade, Pa., to post duty at Fort Strong, Mass.

Franklin M. Kemp, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

Thomas R. Marshall, captain and asst.-surgeon 41st Inf. Vols., from New York City to join his regiment at Camp Meade, Pa.

Clarence B. Millhoff, lieutenant and asst.-surgeon, U. S. A., member of an examining board in San Francisco, vice Captain Isaac P. Ware, asst.-surgeon relieved.

Curtis E. Munn, major and surgeon, U. S. A., from Fort Logan, Colo., to his home to await retirement.

John C. Orr, acting asst.-surgeon, from Fort Strong, Mass., to Camp Meade, Pa., to accompany the 47th Inf. Vols., to Manila, P. I.

William O. Owen, captain and asst.-surgeon, U. S. A., member of a board at St. Louis, Mo., to fix responsibility for certain horses.

John W. Thomas, acting asst.-surgeon, from Washington, D. C., to duty at Key West, Fla.

Compton Wilson, acting asst.-surgeon, revocation of recent orders directing him to proceed from New York City to Washington, D. C.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending Sept. 9, 1899:

Surgeon E. H. Marsteller, ordered to duty in connection with recruiting rendezvous, Buffalo, N. Y., to report at the New York Navy Yard, September 4.

P. A. Surgeon B. R. Ward, Asst.-Surgeon J. F. Chaffee, are detached from the *Boston* when put out of commission and ordered home to await orders.

Surgeon J. C. Decker, detached from the *Monadnock* and ordered to the *Monocacy*, at own expense.

P. A. Surgeon J. Stoughton, detached from the *Monocacy* and ordered to the *Monadnock* at own expense.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended Sept. 8, 1899:

SMALLPOX—UNITED STATES.

California: San Francisco, July 31, 5 deaths.
Florida: Jacksonville, September 3, 1 case.
Kentucky: Louisville, August 31, 2 cases.
Massachusetts: Boston, August 26 to September 2, 2 cases.
Ohio: Cleveland, August 26 to September 2, 4 cases.
Pennsylvania: Altoona, August 26 to September 2, 7 cases.
Texas: 16 points in State, August 26 (71 cases and 2 deaths have, except in two instances, been traced to a hospital at Sedalia, Mo.)

SMALLPOX—FOREIGN.

Belgium: Antwerp, August 19, 1 case, 1 death.
Brazil: Bahia, July 29 to August 7, 3 cases, 1 death; Rio de Janeiro, July 21 to August 1, 55 cases 22 deaths.
Greece: Athens, August 19, 7 cases, 2 deaths.
India: Bombay, August 8, 6 deaths.
Mexico: Chihuahua, August 26, 3 deaths; Neuvo Laredo, August 26, 1 case.
Russia: Moscow, August 11, 2 cases, 2 deaths; Odessa, August 12 to 19, 11 cases, 3 deaths; St. Petersburg, August 19, 3 cases, 1 death; Warsaw, August 12, 1 death.
Straits Settlements: Singapore, July 15, 2 deaths.

YELLOW FEVER—UNITED STATES.

Florida: Key West, September 2, 96 cases, 7 deaths.
Louisiana: New Orleans, September 2, 2 cases, 1 death.

YELLOW FEVER—FOREIGN.

Brazil: Bahia, July 22 to August 12, 3 cases, 2 deaths; Rio de Janeiro July 21 to August 1, 3 cases.
Colombia: Panama, August 22, 20 cases.
Costa Rica: Port Limon, August 14, 1 case, 1 death.
Cuba: Christo, August 19, 1 case; Sancti Espiritu, August 24, 2 cases.
Mexico: Tuxpam, August 21 to 28, 9 deaths; Vera Cruz, August 24 to 31, 19 cases, 14 deaths.
Salvador: San Salvador, August 1, 2 cases.

CHOLERA.

India: Bombay, August 1 to 8, 2 deaths; Calcutta, July 22 to 29, 53 deaths.
Japan: Osaka and Hiogo, August 12, 4 cases, 1 death.

PLAGUE.

China: Amoy, July 22 to August 8, 425 deaths; Hongkong, July 22 to 29 37 cases, 39 deaths.
Egypt: Alexandria, August 7 to 13, 45 cases, 39 deaths.
India: Bombay, August 1 to 8, 75 deaths; Calcutta, July 12 to 29, 16 deaths
Formosa: Tamsui, July 25 to August 10, 13 cases, 20 deaths.
Russia: St. Petersburg August 12 to 21, 1 case.
Straits Settlements: Penang, July 14 to 22, 49 cases, 39 deaths; Singapore, July 15 to 22, 3 cases, 5 deaths.

CHANGE OF ADDRESS.

Brillingham, J. D., from 1823 So. 17th St. to 4205 Girard Ave, Philadelphia, Pa.
Butler, G. F., from 103 State to 794 Adams St., Chicago, Ill.
Daly, J. J., from LaGrange, Ill. to Charles City, Iowa.
Daly, V. M., from Chicago to Pontiac, Ill.
Griffin, O. A., from Fayette, Ohio to 812 E. Washington St., Ann Arbor, Mich.
Hull, G. S., from Mt. Alverno, Pa. to Pasadena, Cal.
Hartman, J. C., from Keown to Box 156, East Pittsburg, Pa.
Herr, A. W., from 440 to 230 Euclid Ave, Cleveland, Ohio.
Heston, H., from Columbus to Baltimore, Ohio.
Krebs, L. L., from Philadelphia, Pa. to 1406 11th St., DesMoines, Iowa.
Lane, T., from Mountain Grove, Mo. to El Reno, O. T.
McCreary, H., from New Concord to Brice, Ohio.
Noble, C. P., from 1637 Broadway to 1509 Locust St., Philadelphia, Pa.
Patterson, C. L., from Marengo to West Side, Iowa.
Small, J. W., from New York to North Tarrytown, N. Y.
Schabinger, C., from Felton, Del. to S. E. cor. 11th and Brown Sts., Philadelphia, Pa.
Tifschitz, A. H., from 1010 Milwaukee Ave. to 11018 Michigan Ave., Chicago, Ill., Pullman Station.